



Aero Design Ltd.
9888A Malaspina Road
Powell River, BC, Canada
V8A 0G3

Tel: 604.483.2376
Fax: 604.483.2372
www.aerodesign.ca

13 April 2016

Lohman Helicopter, LLC.
406 Burrell Avenue, Hangar N23
PO Box 976
Lewiston, ID, USA
83501-4524
Tel : 208-743-5411
Attn: Mr. Jason Lackey, Director of Maintenance

Subject : Installation of Aero Design Ltd. Cargo Baskets and Cabin Steps

Dear Mr. Lackey,

This letter is issued to provide evidence of authorization for Lohman Helicopter, LLC. to install the Aero Design Ltd. MD Helicopters Inc. MD600N Cargo Basket and/or Cabin Step per STC SH09-1 (TCCA), SR02728NY (FAA), in accordance with the applicable approved installation instructions and drawings.

This authorization is limited to MD Helicopters Inc. MD600N helicopters owned or operated by Lohman Helicopter, LLC.

If you have any questions please feel free to contact me.

Thank you,

Jeff Clarke, P.Tech.(Eng.)

Vice-President, Aero Design Ltd.

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

IMPORT

Number SR02728NY

This certificate issued to

Aero Design Ltd.
2013 - 39th Avenue North East
Calgary, Alberta, T2E 6R7
Canada

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product -- Type Certificate Number : H3WE

Make : MDHI

Model : 600N

Description of Type Design Change:

Configuration A - Quick Release Mounting Provisions:

Installation of Quick Release Mounting Provisions on the right or left side in accordance with AERO Design Ltd. Installation Document 82802 Revision 0, as listed in Document Control List DCL828-1 Revision 0, dated December 3, 2008, TCCA approved January 27, 2009, or later TCCA approved revisions.

(See Continuation Sheet 2 of 2)

Limitations and Conditions:

1. Installation of Configuration A is a prerequisite for the installation of Configuration B.
2. Installation of Configuration A is a prerequisite for the installation of Configuration C.
3. Configuration A may remain installed on aircraft when Configuration B or C is removed.
4. Eligibility limitations of cargo basket modifications are noted on the drawings listed in AERO Design Ltd. Document Control List DCL704 Revision 4, dated December 22, 2008.

(See Continuation Sheet 2 of 2)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : April 1, 2009

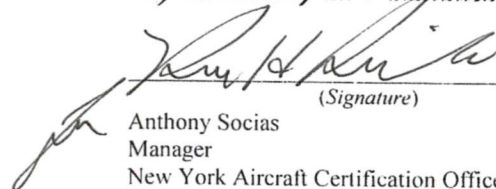
Date reissued :

Date of issuance : August 26, 2009

Date amended :



By direction of the Administrator


(Signature)
Anthony Socias
Manager
New York Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

NEW ENGLAND REGION
NEW YORK AIRCRAFT CERTIFICATION OFFICE
1600 STEWART AVENUE, SUITE 410
WESTBURY, NEW YORK 11590

**INFORMATION CONCERNING YOUR RESPONSIBILITY AS HOLDER OF A
SUPPLEMENTAL TYPE CERTIFICATE ISSUED TO A CANADIAN APPLICANT**

This STC is official indications of FAA approval of your installation and may be used to authorize identical installation on other aircraft of the same model, subject to the limitation noted in the STC. It may be transferred, or otherwise made available to another party by means of a licensee arrangement; however, you are requested to advise this office when you transfer or grant licensee rights to the STC in order that we may take the necessary recording or reissuance action.

If you plan to manufacture and sell parts for installation on type certificated aircraft, please review FAR 21.502, which is applicable to parts imported into the U.S.

A copy of the STC and required documents should accompany each kit and installation. Also, your attention is directed to the limitations and conditions specified in the STC.

As recipient of this approval, except as provided in FAR21.3(d), you are required to report any failure, malfunction, or defect in any product or part manufactured by you that you have determined has resulted or could result in any of the occurrences listed in FAR 21.3(c).

The report should be communicated initially by telephone and subsequently in writing to the Manager, New York Aircraft Certification Office, telephone (516) 228-7300, mailing address: 1600 Stewart Avenue, Suite 410, Westbury, New York 11590. This first contact should take place within 24 hours after it has been determined that the failure required to be reported has occurred.

FAA Form 8010-4, Malfunction or Defect Report, or any other appropriate format is acceptable in transmitting the required details.



Anthony Socias
Manager,
New York Aircraft Certification Office



Transport
Canada

Transports
Canada

1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

Your file Votre reference

September 24, 2009

Our file Notre reference
C-09-0361
SH09-1

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada, T2E 6R7

ATTENTION: EDWARD BURGOIN

Dear Sir:

SUBJECT:	Approval of	Installation of Quick Release Mounting Provisions / Cargo Basket / Step on the right or left side of the helicopter.
	FAA STC:	SR02728NY
	Aircraft:	MD HELICOPTERS, INC. 600N
	FAA STC Holder:	Aero Design Ltd.

Enclosed is the original FAA Supplemental Type Certificate SR02728NY and information concerning your responsibility as a holder of a Supplemental Type Certificate issued to a Canadian Applicant.

FAA STC SR02728NY is based on Issue 1 of Canadian STC SH09-1.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD828, Rev. 1

1. NAME AND ADDRESS OF APPLICANT:		2. IDENTIFICATION OF PRODUCT	
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		MAKE: MD Helicopters Inc.	MODEL: MD 600N
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		SERIAL No.: All eligible	REGISTRATION: All eligible

3. REQUEST FOR:

- | | | |
|---|-------------------------------------|---------------|
| A. SUPPLEMENTAL TYPE CERTIFICATE (STC) | <input type="checkbox"/> | |
| B. STC/STA REVISION | <input type="checkbox"/> | STC/STA No. |
| C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC) | <input type="checkbox"/> | |
| D. LIMITED STC/STA REVISION | <input type="checkbox"/> | LSTC/LSTA No. |
| E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE | <input checked="" type="checkbox"/> | |
| F. F.A.A. STC REVISION | <input type="checkbox"/> | STC No. |
| G. FAMILIARIZATION OF F.A.A. STC | <input type="checkbox"/> | STC No. |
| H. REPAIR DESIGN APPROVAL (RDC) | <input type="checkbox"/> | |
| I. PARTS DESIGN APPROVAL (PDA) | <input type="checkbox"/> | |

4. TITLE OF MODIFICATION OR REPAIR:

Quick Release Cargo Basket Installation

5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:

Steel support beams attach to the jacking points under the cabin door. Additional support is provided by struts braced on a spacer between the cargo hook fitting and the fuselage. The steel frame and mesh basket attaches to the support beams, to carry cargo externally. The basket can be mounted and removed from the beams without tools. The Basket is interchangeable with a passenger step.

6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:

A. TA NO. _____ B. TC No. H3WE C. OTHER _____

7. PROPOSED BASIS OF APPROVAL:

A. SAME AS TA ☐ B. SAME AS TC ☒ C. OTHER ☐ (Please specify) _____

8. DOCUMENTATION CHECKLIST	REQUIRED		FOR DOT USE ONLY		
	YES	NO	RECEIVED		DATE
			YES	NO	
COMPLIANCE PROGRAM	X				
MASTER DRAWING LIST	X				
FLIGHT MANUAL SUPPLEMENT	X				
MAINTENANCE MANUAL SUPPLEMENT		X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS	X				
ENGINEERING REPORTS	X				
DESIGN DRAWINGS		X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS	X				
ELECTRICAL LOAD ANALYSIS		X			
DRAFT STC, LSTC OR RDA		X			
WEIGHT AND MOMENT CHANGE	X				
FLIGHT TEST DATA	X				
OTHER (Specify)		X			

9. APPLICANT'S REMARKS:

STC based on Transport Canada STC # SH09-1


10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Canada incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.

AERO Design Ltd.

PER: 
SIGNATURE OF APPLICANTS

Consultant
TITLE

1 April, 2009
DATE

11. 
SIGNATURE OF REGIONAL ENGINEER: *M. Tan*

20 Apr 2009
DATE

Transport
CanadaTransports
Canada#1100, 9700 Jasper Avenue
Edmonton, Alberta
T5J 4E6FAXED
5 Pages

Sept 25/09

FACSIMILE

Date 25-Sep-09

No. of pages (including cover sheet) 5

Our File: C-09-0361

SH09-1

Your File:

To: AERO DESIGN LTD.

ATTN: TED BURGOIN

Phone (403) 250-8027

Fax Phone (403) 250-8333

From Debbie Dubyk

Phone 780-495-7412

Fax Phone 780-495-7963

SUBJECT: FAA STC SR02728NY – INSTALLATION OF QUICK RELEASE MOUNTING PROVISIONS/CARGO BASKET/STEP ON THE RIGHT OR LEFT SIDE OF THE HELICOPTER – MD HELICOPTERS INC. 600N – ISSUED TO AERO DESIGN LTD. – BASED ON ISSUE 1 OF CANADIAN STC SH09-1

Hi Ted:

Please find attached an advance copy of the above noted FAA STC which was received from the FAA. Also attached is an advance copy of our cover letter to you concerning this FAA STC.

The original FAA STC SR02728NY and our cover letter dated September 24, 2009, will be sent to you in the mail next week.

Thank you.

Debbie Dubyk

Operational Support Assistant

Canada

Transport
CanadaTransports
Canada1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

September 24, 2009

Your file Votre référence

Our file Notre référence
C-09-0361
SH09-1Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada, T2E 6R7**ATTENTION: EDWARD BURGOIN**

Dear Sir:

**SUBJECT: Approval of Installation of Quick Release Mounting
Provisions / Cargo Basket / Step on the right or
left side of the helicopter.**

FAA STC: SR02728NY
Aircraft: MD HELICOPTERS, INC. 600N
FAA STC Holder: Aero Design Ltd.

Enclosed is the original FAA Supplemental Type Certificate SR02728NY and information concerning your responsibility as a holder of a Supplemental Type Certificate issued to a Canadian Applicant.

FAA STC SR02728NY is based on Issue 1 of Canadian STC SH09-1.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

Canada

United States of America
 Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate
IMPORT

Number SR02728NY

This certificate issued to

Aero Design Ltd.
 2013 - 39th Avenue North East
 Calgary, Alberta, T2E 6R7
 Canada

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified herein meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product -- Type Certificate Number : H3WE

Make : MDHI

Model : 600N

Description of Type Design Change:

Configuration A - Quick Release Mounting Provisions:

Installation of Quick Release Mounting Provisions on the right or left side in accordance with AERO Design Ltd. Installation Document 82802 Revision 0, as listed in Document Control List DCL828-1 Revision 0, dated December 3, 2008, TCCA approved January 27, 2009, or later TCCA approved revisions.

(See Continuation Sheet 2 of 2)

Limitations and Conditions:

1. Installation of Configuration A is a prerequisite for the installation of Configuration B.
2. Installation of Configuration A is a prerequisite for the installation of Configuration C.
3. Configuration A may remain installed on aircraft when Configuration B or C is removed.
4. Eligibility limitations of cargo basket modifications are noted on the drawings listed in AERO Design Ltd. Document Control List DCL704 Revision 4, dated December 22, 2008.

(See Continuation Sheet 2 of 2)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : April 1, 2009

Date reissued :

Date of issuance : August 26, 2009

Date amended :



By direction of the Administrator

[Signature]
 (Signature)
 Anthony Socias
 Manager
 New York Aircraft Certification Office

(Title)

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)
Number SR02728NY

Description of Type Design Change: (Continued)

Configuration B – Quick Release Cargo Basket Installation:

Installation of Quick Release Cargo Basket on the right or left side in accordance with AERO Design Ltd. Installation Document 82801 Revision 0, as listed in Document Control List DCL828-1 Revision 0, dated December 3, 2008, TCCA approved January 27, 2009, or later TCCA approved revisions.

Configuration C – Quick Release Step Installation:

Installation of Quick Release Step on the right or left side in accordance with AERO Design Ltd. Installation Document 82901 Revision 0, as listed in Document Control List DCL829-1 Revision 0, dated December 3, 2008, TCCA approved January 27, 2009, or later TCCA approved revisions.

Cargo Basket Modifications:

Modifications to the cargo basket configuration are eligible in accordance with AERO Design Ltd. Document Control List DCL704 Revision 4, dated December 22, 2008, TCCA approved January 27, 2009, or later TCCA approved revisions.

Limitations and Conditions: (Continued)

5. AERO Design Ltd. Rotorcraft Flight Manual Supplement FMS828.91. Revision 0, dated November 27, 2008, TCCA approved January 27, 2009, or later TCCA approved revisions is required to all installation configurations.
6. AERO Design Ltd. Instructions for Continued Airworthiness ICA 828.90 Revision 0, dated November 27, 2008, TCCA accepted January 27, 2009, or later TCCA accepted revisions is required with the installation of the quick release cargo basket.
7. AERO Design Ltd. Instructions for Continued Airworthiness ICA 829.90 Revision 0, dated November 27, 2008, TCCA accepted January 27, 2009, or later TCCA accepted revisions is required with the installation of the quick release step.
8. The installer must determine whether this design change is compatible with previously approved modifications.
9. If the holder agrees to permit another person to use this certificate to alter a product, the holder must give the other person written evidence of that permission.

.....END.....

**NEW ENGLAND REGION
NEW YORK AIRCRAFT CERTIFICATION OFFICE
1600 STEWART AVENUE, SUITE 410
WESTBURY, NEW YORK 11590**

**INFORMATION CONCERNING YOUR RESPONSIBILITY AS HOLDER OF A
SUPPLEMENTAL TYPE CERTIFICATE ISSUED TO A CANADIAN APPLICANT**

This STC is official indications of FAA approval of your installation and may be used to authorize identical installation on other aircraft of the same model, subject to the limitation noted in the STC. It may be transferred, or otherwise made available to another party by means of a licensee arrangement; however, you are requested to advise this office when you transfer or grant licensee rights to the STC in order that we may take the necessary recording or reissuance action.

If you plan to manufacture and sell parts for installation on type certificated aircraft, please review FAR 21.502, which is applicable to parts imported into the U.S.

A copy of the STC and required documents should accompany each kit and installation. Also, your attention is directed to the limitations and conditions specified in the STC.

As recipient of this approval, except as provided in FAR21.3(d), you are required to report any failure, malfunction, or defect in any product or part manufactured by you that you have determined has resulted or could result in any of the occurrences listed in FAR 21.3(c).

The report should be communicated initially by telephone and subsequently in writing to the Manager, New York Aircraft Certification Office, telephone (516) 228-7300, mailing address: 1600 Stewart Avenue, Suite 410, Westbury, New York 11590. This first contact should take place within 24 hours after it has been determined that the failure required to be reported has occurred.

FAA Form 8010-4, Malfunction or Defect Report, or any other appropriate format is acceptable in transmitting the required details.



Anthony Socias
Manager,
New York Aircraft Certification Office

Steven Fahey

From: "Austen, David" <david.austen@tc.gc.ca>
To: "Steven Fahey" <steve@aerodesign.ca>
Sent: Wednesday, September 09, 2009 12:28 PM
Subject: RE: Status of STC applications @ FAA

Hi Steve:

Nothing yet, so I just gave them a gentle nudge....

Cheers!

David Austen, FEC, P.Eng.

Aircraft Certification | Certification des aeronefs

(780) 495-5226 | Facs/telec: (780) 495 7963

To provide feedback to TCCA, use CAIRS.

See: <http://www.tc.gc.ca/CivilAviation/ManagementServices/QA/cairs.htm>

Pour tout commentaire à TCAC, utiliser CAIRS.

Voir: <<http://www.tc.gc.ca/AviationCivile/ServicesdeGestion/AQ/ssqac.htm>>

From: Steven Fahey [mailto:steve@aerodesign.ca]

Sent: 09 September, 2009 2:28 PM

To: Austen, David

Subject: Re: Status of STC applications @ FAA

Hello Dave,

Have you heard back from them?

Steve

----- Original Message -----

From: Austen, David

To: Steven Fahey

Cc: Anthony.Troia@faa.gov ; raymond.reinhardt@faa.gov

Sent: Monday, August 24, 2009 8:22 AM

Subject: RE: Status of STC applications @ FAA

Thx for the note, Steven.

Anthony:

Can we enlist your assistance to let us know where the following applications stand?

I apologise for not having the FAA project number handy at this point.

Best regards,

David Austen, FEC, P.Eng.

Aircraft Certification | Certification des aeronefs

(780) 495-5226 | Facs/telec: (780) 495 7963

To provide feedback to TCCA, use CAIRS.

See: <http://www.tc.gc.ca/CivilAviation/ManagementServices/QA/cairs.htm>

Pour tout commentaire à TCAC, utiliser CAIRS.

Voir: <<http://www.tc.gc.ca/AviationCivile/ServicesdeGestion/AQ/ssqac.htm>>

From: Steven Fahey [mailto:steve@aerodesign.ca]
Sent: 21 August, 2009 12:00 PM
To: Austen, David
Subject: Status of STC applications @ FAA

Hi Dave,

I'd like to check in on any news from the FAA. We have several STC applications open:

Cargo baskets for the
Bell 212/205 SH07-56
Bell 206B SH09-5
Bell 407/206L SH00-48 (SR02253NY)
MD600N SH09-1

Destiny/Kodiak SH02-17 (SR01655NY)

Thanks,

Steven Fahey
steve@aerodesign.ca
Aero Design Ltd.
2013 - 39th Avenue NE
Calgary, Alberta, Canada
T2E 6R7
tel: (403) 250-8027
fax: (403) 250-8333
www.aerodesign.ca



Transport
Canada

Transports
Canada

1100 - 9700 Jasper Avenue
Edmonton, Alberta, T5J 4E6
Canada

April 21, 2009

Department of Transportation
Federal Aviation Administration
New York Aircraft Certification Office
1600 Stewart Avenue, Suite 410
Westbury, NY 11590
USA

Your file Votre référence

Our file Notre référence
C-09-0361
SH09-1

Attn: Mr. A. Socias, Manager

**SUBJECT: Application for FAA Supplemental Type Certificate
Installation of Quick Release Provision; Cargo Basket; Step**

We have received an application from a Canadian applicant, Aero Design Ltd., for the issue of a Canadian Supplemental Type Certificate (STC) and an FAA STC for installation of Quick Release Provisions, Cargo Basket, and Step on MD Helicopters 600N series of rotorcraft.

We have reviewed the applicant's submission and hereby certify that the design change complies with the basis of certification specified in Canadian Type Certificate H-95. We have therefore issued STC SH09-1, issue 1, dated January 27, 2009. We also confirm that compliance is demonstrated with FAA Type Certificate H3WE, unless additional technical conditions are applied by the FAA.

Please consider this to be a formal application for an FAA STC under the provisions of the Canada-U.S. Bilateral Airworthiness Agreement. In support of this application, the following are enclosed:

1. FAA Form 8110-12, dated April 1, 2009,
2. Copy of STC SH09-1, issue 1, dated January 27, 2009,
3. Compliance Program CP828, dated November 24, 2008,
4. Master Drawing Lists DCL828-1, DCL828-11, DCL829-1, DCL829-11, DCL829-12,
5. Flight Manual Supplement FMS828.91, approved January 27, 2009,
6. Instructions for Continued Airworthiness, ICA828.90, ICA829.90, dated November 27, 2008.

Additional supporting documents are attached, as listed in the attached letter from Aero Design Ltd., dated 1 April, 2009. PDF copies of all documents are included in the CD-ROM disc.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

enclosures

cc: Aero Design Ltd.

Canada

1100 - 9700 Jasper Avenue
Edmonton, Alberta

April 6, 2009

Department of Transportation
Federal Aviation Administration
New York Aircraft Certification Office
1600 Stewart Avenue, Suite 410
Westbury, NY 11590

Attn: Mr. A. Socias, Manager

**SUBJECT: Application for FAA Supplemental Type Certificate
Installation of Quick Release Provision; Cargo Basket; Step**

JACK
YOU WILL NEED TO CHANGE THESE
YOURSELF BUT I GOT A START ON THE
BODY FOR YOU.

C-09-0000
SH09-1

We have received an application from a Canadian resident, Aero Design Ltd., for the issue of a Canadian Supplemental Type Certificate (STC) and an FAA STC to cover installation of Quick Release Provisions, Cargo Basket, and Step on MD Helicopters 600N series of rotorcraft.

We have reviewed the applicant's submission and hereby certify that the design change complies with the basis of certification specified in Canadian Type Certificate H-95. We have therefore issued STC SH09-1, issue 1, dated January 27, 2009. We also confirm that compliance is demonstrated with FAA Type Certificate H3WE, unless additional technical conditions are applied by the FAA.

Please consider this to be a formal application for an FAA STC under the provisions of the Canada-U.S. Bilateral Airworthiness Agreement. In support of this application, the following are enclosed:

1. FAA Form 8110-12, dated April 1, 2009,
2. Copy of STC SH09-1, issue 1, dated January 27, 2009,
3. Compliance Program CP828, dated November 24, 2008,
4. Master Drawing Lists DCL828-1, DCL828-11, DCL829-1, DCL829-11, DCL829-12,
5. Flight Manual Supplement FMS828.91, approved January 27, 2009,
6. Instructions for Continued Airworthiness, ICA828.90, ICA829.90, dated November 27, 2008.

Additional supporting documents are attached, as listed in the attached letter from Aero Design Ltd., dated 1 April, 2009. PDF copies of all documents are included in the CD-ROM disc.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

enclosures

cc: Aero Design Ltd.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

APPLICATION FOR TYPE CERTIFICATE, PRODUCTION CERTIFICATE,
OR SUPPLEMENTAL TYPE CERTIFICATE

FORM APPROVED
O.M.B. No. 04-R0078

1. Name and address of applicant

Aero Design Ltd.
2013 - 39th Avenue NE
Calgary, Alberta, T2E 6R7
Canada

2. Application made for -

- ☐ Type Certificate
☐ Production Certificate
☒ Supplemental Type Certificate

3. Product involved

- ☒ Aircraft
☐ Engine
☐ Propeller

4. TYPE CERTIFICATE (Complete item 4a below)

- a. Model designation(s) (All models listed are to be completely described in the required technical data, including drawings representing the design, material, specifications, construction, and performance of the aircraft, aircraft engine, propeller which is the subject of this application.)

5. PRODUCTION CERTIFICATE (Complete items 5a-c below. Submit with this form, in manual form, one copy of quality control data or changes thereto covering new products, as required by applicable FAR.)

a. Factory address (If different from 1 above)

b. Application is for -

- ☐ New Production Certificate
☐ Additions to Production Certificate (Give P.C. No.)

P.C. No.

c. Applicant is holder of or a licensee under a Type Certificate or a Supplemental Type Certificate (Attach evidence of licensing agreement and give certificate number)

T.C./S.T.C. No.

6. SUPPLEMENTAL TYPE CERTIFICATE (Complete items 6a-d below)

a. Make and model designation of product to be modified
MD Helicopters Inc. (McDonnell Douglas) MD600N
(TCDS: H3WE)

b. Description of modification

Installation of External Cargo Basket

Steel support beams attach to the jacking points under the cabin door. Additional support is provided by struts braced on a spacer between the cargo hook fitting and the fuselage. The steel frame and mesh basket attaches to the support beams, to carry cargo externally.

The basket can be mounted and removed from the beams without tools. The Basket is interchangeable with a passenger step.

c. Will data be available for sale or release to other persons?

☐ YES ☒ NO

d. Will parts be manufactured for sale? (Ref. FAR 21.303)

☒ YES ☐ NO

7. CERTIFICATION - I certify that the above statements are true.

Signature of certifying official

Title

Date

DAR 290M (AERO Design Ltd.)

1 April, 2009

AERO DESIGN LTD.

2013 – 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027

Fax: 403-250-8333

www.aerodesign.ca

1 April, 2009

Transport Canada
Aircraft Certification Division
800-1601 Airport Road
Calgary, Alberta
T2E 6Z8

Attn: Jack Staal

File : SH09-1

Re: FAA STC Application for MD Helicopters 600N Cargo Basket

Jack,

Please forward the following documents to the appropriate office of the FAA:

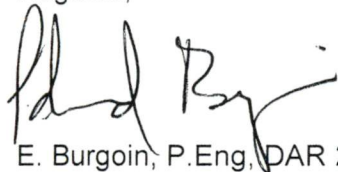
FAA STC Application Form	8110.12	
Modification Approval Request Application Form	MOD828	Rev. 1
Supplemental Type Certificate (TCCA)	SH09-1	Issue 1
Compliance Program	CP828	Rev. 0
Document Control List	DCL828-1	Rev. 1
Document Control List	DCL828-11	Rev. 0
Document Control List	DCL828-12	Rev. 0
Document Control List	DCL829-1	Rev. 0
Document Control List	DCL829-11	Rev. 0
Instructions for Continued Airworthiness	ICA 828.90	Rev. 0
Instructions for Continued Airworthiness	ICA 829.90	Rev. 0
Engineering Report	ER 828.01	Rev. 0
Engineering Report	ER 829.01	Rev. 0
Flight Test Report (Transport Canada Pilot's report)	TR 828.01	Rev. 0
Flight Manual Supplement	FMS 828.91	Rev. 0
Cargo Basket Installation Drawing	82801	Rev. 0
Support Beams Installation Drawing	82802	Rev. 0
Cargo Basket Assembly Drawing	82810	Rev. 0
Passenger Step Installation Drawing	82901	Rev. 0
Passenger Step Assembly Drawing	82910	Rev. 0
Document Control List (Basket Modifications)	DCL704	Rev. 4
Engineering Report	ER 704.02	Rev. 0
Open Forward End Modification Drawing	70401	Rev. 1
Lid Door Modification Drawing	70402	Rev. 1
Auxiliary Latch Modification Drawing	70403	Rev. 3
Lid Step Modification Drawing	70405	Rev. 2

...continued

The drawings below are on the enclosed CD-ROM:

Basket Components - Basket Body Assembly Drawing	82811	Rev. 0
Basket Components - Basket Lid Assembly Drawing	82812	Rev. 0
Basket Components - Down Tube Assembly Drawing	82815	Rev. 0
Basket Components - Attachment Hoop Drawing	82821	Rev. 0
Basket Components - Placard Drawing	82827	Rev. 0
Basket Components - Cargo Hook Pad Drawing	82830	Rev. 0
Basket Components - Strut Assembly Drawing	82831	Rev. 0
Basket Components - Down Tube Fabrication Drawing	82832	Rev. 0
Basket Components - Hoops	49210	Rev. 1
Basket Components - Spacer	49215	Rev. 0
Basket Components - Spacer	49216	Rev. 0
Handle Assembly	36255	Rev. 1
Handle Bar Assembly	36261	Rev. 6
Handle Bracket Assembly	36262	Rev. 1
Handle Lever	36271	Rev. 1
Basket Bracket	36272	Rev. 1
Lid Bracket	36273	Rev. 1
Bushing	36274	Rev. 1
Bushing	36275	Rev. 2
Handle Bar	36277	Rev. 0
Spring	36278	Rev. 1
Brace	36280, Sheet 1	Rev. 2
Brace	36280, Sheet 2	Rev. 2

Regards,

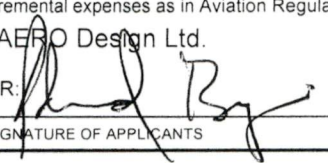


E. Burgoin, P.Eng, DAR 290M

Encl.

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD828, Rev. 1

1. NAME AND ADDRESS OF APPLICANT:		2. IDENTIFICATION OF PRODUCT				
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		MAKE: MD Helicopters Inc.	MODEL: MD 600N			
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		SERIAL No.: All eligible	REGISTRATION: All eligible			
3. REQUEST FOR:						
A. SUPPLEMENTAL TYPE CERTIFICATE (STC)		<input type="checkbox"/>				
B. STC/STA REVISION		<input type="checkbox"/> STC/STA No.				
C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)		<input type="checkbox"/>				
D. LIMITED STC/STA REVISION		<input type="checkbox"/> LSTC/LSTA No.				
E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE		<input checked="" type="checkbox"/>				
F. F.A.A. STC REVISION		<input type="checkbox"/> STC No.				
G. FAMILIARIZATION OF F.A.A. STC		<input type="checkbox"/> STC No.				
H. REPAIR DESIGN APPROVAL (RDC)		<input type="checkbox"/>				
I. PARTS DESIGN APPROVAL (PDA)		<input type="checkbox"/>				
4. TITLE OF MODIFICATION OR REPAIR: Quick Release Cargo Basket Installation						
5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR: Steel support beams attach to the jacking points under the cabin door. Additional support is provided by struts braced on a spacer between the cargo hook fitting and the fuselage. The steel frame and mesh basket attaches to the support beams, to carry cargo externally. The basket can be mounted and removed from the beams without tools. The Basket is interchangeable with a passenger step.						
6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:						
A. TA NO. _____ B. TC No. H3WE C. OTHER _____						
7. PROPOSED BASIS OF APPROVAL:						
A. SAME AS TA <input type="checkbox"/> B. SAME AS TC <input checked="" type="checkbox"/> C. OTHER <input type="checkbox"/> (Please specify) _____						
8. DOCUMENTATION CHECKLIST		REQUIRED		FOR DOT USE ONLY		
		YES	NO	RECEIVED		
		YES	NO	YES	NO	DATE
COMPLIANCE PROGRAM		X				
MASTER DRAWING LIST		X				
FLIGHT MANUAL SUPPLEMENT		X				
MAINTENANCE MANUAL SUPPLEMENT			X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS		X				
ENGINEERING REPORTS		X				
DESIGN DRAWINGS			X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS		X				
ELECTRICAL LOAD ANALYSIS			X			
DRAFT STC, LSTC OR RDA			X			
WEIGHT AND MOMENT CHANGE		X				
FLIGHT TEST DATA		X				
OTHER (Specify)			X			
9. APPLICANT'S REMARKS: STC based on Transport Canada STC # SH09-1						
10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Canada incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.						
AERO Design Ltd.						
PER: 		Consultant		1 April, 2009		
SIGNATURE OF APPLICANTS		TITLE		DATE		
11.						
SIGNATURE OF REGIONAL ENGINEER						DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

APPLICATION FOR TYPE CERTIFICATE, PRODUCTION CERTIFICATE,
OR SUPPLEMENTAL TYPE CERTIFICATE

FORM APPROVED
O.M.B. No. 04-R0078

1. Name and address of applicant

Aero Design Ltd.
2013 - 39th Avenue NE
Calgary, Alberta, T2E 6R7
Canada

2. Application made for -

- ☐ Type Certificate
☐ Production Certificate
☒ Supplemental Type Certificate

3. Product involved

- ☒ Aircraft
☐ Engine
☐ Propeller

4. TYPE CERTIFICATE (Complete item 4a below)

a. Model designation(s) (All models listed are to be completely described in the required technical data, including drawings representing the design, material, specifications, construction, and performance of the aircraft, aircraft engine, propeller which is the subject of this application.)

5. PRODUCTION CERTIFICATE (Complete items 5a-c below. Submit with this form, in manual form, one copy of quality control data or changes thereto covering new products, as required by applicable FAR.)

a. Factory address (If different from 1 above)

b. Application is for -

- ☐ New Production Certificate
☐ Additions to Production Certificate (Give P.C. No.)

P.C. No.

c. Applicant is holder of or a licensee under a Type Certificate or a Supplemental Type Certificate (Attach evidence of licensing agreement and give certificate number)

T.C./S.T.C. No.

6. SUPPLEMENTAL TYPE CERTIFICATE (Complete items 6a-d below)

a. Make and model designation of product to be modified
MD Helicopters Inc. (McDonnell Douglas) MD600N
(TCDS: H3WE)

b. Description of modification

Installation of External Cargo Basket

Steel support beams attach to the jacking points under the cabin door. Additional support is provided by struts braced on a spacer between the cargo hook fitting and the fuselage. The steel frame and mesh basket attaches to the support beams, to carry cargo externally.

The basket can be mounted and removed from the beams without tools. The Basket is interchangeable with a passenger step.

c. Will data be available for sale or release to other persons?

☐ YES ☒ NO

d. Will parts be manufactured for sale? (Ref. FAR 21.303)

☒ YES ☐ NO

7. CERTIFICATION - I certify that the above statements are true.

Signature of certifying official

Title

Date

DAR 290M (AERO Design Ltd.)

1 April, 2009

AERO DESIGN LTD.

2013 - 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027

Fax: 403-250-8333

www.aerodesign.ca

1 April, 2009

Transport Canada
Aircraft Certification Division
800-1601 Airport Road
Calgary, Alberta
T2E 6Z8

Attn: Jack Staal

File : SH09-1

Re: FAA STC Application for MD Helicopters 600N Cargo Basket

Jack,

Please forward the following documents to the appropriate office of the FAA:

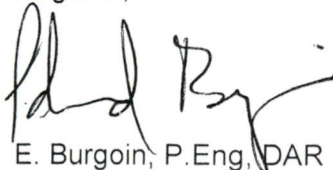
FAA STC Application Form	8110.12	
Modification Approval Request Application Form	MOD828	Rev. 1
Supplemental Type Certificate (TCCA)	SH09-1	Issue 1
Compliance Program	CP828	Rev. 0
Document Control List	DCL828-1	Rev. 1
Document Control List	DCL828-11	Rev. 0
Document Control List	DCL828-12	Rev. 0
Document Control List	DCL829-1	Rev. 0
Document Control List	DCL829-11	Rev. 0
Instructions for Continued Airworthiness	ICA 828.90	Rev. 0
Instructions for Continued Airworthiness	ICA 829.90	Rev. 0
Engineering Report	ER 828.01	Rev. 0
Engineering Report	ER 829.01	Rev. 0
Flight Test Report (Transport Canada Pilot's report)	TR 828.01	Rev. 0
Flight Manual Supplement	FMS 828.91	Rev. 0
Cargo Basket Installation Drawing	82801	Rev. 0
Support Beams Installation Drawing	82802	Rev. 0
Cargo Basket Assembly Drawing	82810	Rev. 0
Passenger Step Installation Drawing	82901	Rev. 0
Passenger Step Assembly Drawing	82910	Rev. 0
Document Control List (Basket Modifications)	DCL704	Rev. 4
Engineering Report	ER 704.02	Rev. 0
Open Forward End Modification Drawing	70401	Rev. 1
Lid Door Modification Drawing	70402	Rev. 1
Auxiliary Latch Modification Drawing	70403	Rev. 3
Lid Step Modification Drawing	70405	Rev. 2

...continued

The drawings below are on the enclosed CD-ROM:

Basket Components - Basket Body Assembly Drawing	82811	Rev. 0
Basket Components - Basket Lid Assembly Drawing	82812	Rev. 0
Basket Components - Down Tube Assembly Drawing	82815	Rev. 0
Basket Components - Attachment Hoop Drawing	82821	Rev. 0
Basket Components - Placard Drawing	82827	Rev. 0
Basket Components - Cargo Hook Pad Drawing	82830	Rev. 0
Basket Components - Strut Assembly Drawing	82831	Rev. 0
Basket Components - Down Tube Fabrication Drawing	82832	Rev. 0
Basket Components - Hoops	49210	Rev. 1
Basket Components - Spacer	49215	Rev. 0
Basket Components - Spacer	49216	Rev. 0
Handle Assembly	36255	Rev. 1
Handle Bar Assembly	36261	Rev. 6
Handle Bracket Assembly	36262	Rev. 1
Handle Lever	36271	Rev. 1
Basket Bracket	36272	Rev. 1
Lid Bracket	36273	Rev. 1
Bushing	36274	Rev. 1
Bushing	36275	Rev. 2
Handle Bar	36277	Rev. 0
Spring	36278	Rev. 1
Brace	36280, Sheet 1	Rev. 2
Brace	36280, Sheet 2	Rev. 2

Regards,



E. Burgoin, P.Eng, DAR 290M

Encl.

1100 - 9700 Jasper Avenue
Edmonton, Alberta

April 6, 2009

Department of Transportation
Federal Aviation Administration
New York Aircraft Certification Office
1600 Stewart Avenue, Suite 410
Westbury, NY 11590

Attn: Mr. A. Socias, Manager

SUBJECT: Application for FAA Supplemental Type Certificate
Installation of Quick Release Provision; Cargo Basket; Step

JACK
YOU WILL NEED TO CHANGE THESE
YOURSELF BUT I GOT A START ON THE
BODY FOR YOU.

C-09-0000
SH09-1

We have received an application from a Canadian resident, Aero Design Ltd., for the issue of a Canadian Supplemental Type Certificate (STC) and an FAA STC to cover installation of Quick Release Provisions, Cargo Basket, and Step on MD Helicopters 600N series of rotorcraft.

We have reviewed the applicant's submission and hereby certify that the design change complies with the basis of certification specified in Canadian Type Certificate H-95. We have therefore issued STC SH09-1, issue 1, dated January 27, 2009. We also confirm that compliance is demonstrated with FAA Type Certificate H3WE, unless additional technical conditions are applied by the FAA.

Please consider this to be a formal application for an FAA STC under the provisions of the Canada-U.S. Bilateral Airworthiness Agreement. In support of this application, the following are enclosed:

1. FAA Form 8110-12, dated April 1, 2009,
2. Copy of STC SH09-1, issue 1, dated January 27, 2009,
3. Compliance Program CP828, dated November 24, 2008,
4. Master Drawing Lists DCL828-1, DCL828-11, DCL829-1, DCL829-11, DCL829-12,
5. Flight Manual Supplement FMS828.91, approved January 27, 2009,
6. Instructions for Continued Airworthiness, ICA828.90, ICA829.90, dated November 27, 2008.

Additional supporting documents are attached, as listed in the attached letter from Aero Design Ltd., dated 1 April, 2009. PDF copies of all documents are included in the CD-ROM disc.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

enclosures

cc: Aero Design Ltd.



Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-1

Issue No.: 1

Approval Date: January 27, 2009

Issue Date: January 27, 2009

Responsible Office:

Prairie and Northern

Aircraft/Engine Type or Model:

MD HELICOPTERS, INC. 600N

Canadian Type Certificate or Equivalent:

H-95

Description of Type Design Change:

Installation of Quick Release Mounting Provisions / Cargo Basket / Step on the right or left side of the helicopter.

**Installation/Operating Data,
Required Equipment and Limitations:**

Configuration A - Quick Release Mounting Provisions:

Installation of Quick Release Mounting Provisions to be completed in accordance with Transport Canada Civil Aviation (TCCA) approved, AERO Design Ltd. Document Control List, DCL828-1, Revision 0, dated 3 December 2008, or later approved revision.

Quick Release Mounting Provisions may remain installed if any other configuration is removed.

Configuration B - Quick Release Cargo Basket Installation:

Installation of Configuration A - Quick Release Mounting Provisions is a mandatory prerequisite for installation of Configuration B. Installation of Quick Release Cargo Basket to be completed in accordance with TCCA approved, AERO Design Ltd. Document Control List, DCL 828-1, Revision 0, dated 3 December 2008, or later approved revision.

...See Continuation Sheet


Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.



R.A. Goossens
For Minister of Transport

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD828, Rev. 1

1. NAME AND ADDRESS OF APPLICANT:		2. IDENTIFICATION OF PRODUCT					
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		MAKE: MD Helicopters Inc.		MODEL: MD 600N			
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		SERIAL No.: All eligible		REGISTRATION: All eligible			
3. REQUEST FOR:							
A. SUPPLEMENTAL TYPE CERTIFICATE (STC)		<input type="checkbox"/>					
B. STC/STA REVISION		<input type="checkbox"/> STC/STA No.					
C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)		<input type="checkbox"/>					
D. LIMITED STC/STA REVISION		<input type="checkbox"/> LSTC/LSTA No.					
E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE		<input checked="" type="checkbox"/>					
F. F.A.A. STC REVISION		<input type="checkbox"/> STC No.					
G. FAMILIARIZATION OF F.A.A. STC		<input type="checkbox"/> STC No.					
H. REPAIR DESIGN APPROVAL (RDC)		<input type="checkbox"/>					
I. PARTS DESIGN APPROVAL (PDA)		<input type="checkbox"/>					
4. TITLE OF MODIFICATION OR REPAIR: Quick Release Cargo Basket Installation							
5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR: Steel support beams attach to the jacking points under the cabin door. Additional support is provided by struts braced on a spacer between the cargo hook fitting and the fuselage. The steel frame and mesh basket attaches to the support beams, to carry cargo externally. The basket can be mounted and removed from the beams without tools. The Basket is interchangeable with a passenger step.							
6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:							
A. TA NO. _____ B. TC No. H3WE _____ C. OTHER _____							
7. PROPOSED BASIS OF APPROVAL:							
A. SAME AS TA <input type="checkbox"/> B. SAME AS TC <input checked="" type="checkbox"/> C. OTHER <input type="checkbox"/> (Please specify) _____							
8. DOCUMENTATION CHECKLIST			REQUIRED		FOR DOT USE ONLY		
			YES	NO	RECEIVED		
			YES	NO	YES	NO	DATE
COMPLIANCE PROGRAM			X				
MASTER DRAWING LIST			X				
FLIGHT MANUAL SUPPLEMENT			X				
MAINTENANCE MANUAL SUPPLEMENT				X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS			X				
ENGINEERING REPORTS			X				
DESIGN DRAWINGS				X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS			X				
ELECTRICAL LOAD ANALYSIS				X			
DRAFT STC, LSTC OR RDA				X			
WEIGHT AND MOMENT CHANGE			X				
FLIGHT TEST DATA			X				
OTHER (Specify)				X			
9. APPLICANT'S REMARKS: STC based on Transport Canada STC # SH09-1							
10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Canada incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.							
AERO Design Ltd.							
PER: 		Consultant		1 April, 2009			
SIGNATURE OF APPLICANTS		TITLE		DATE			
11.							
SIGNATURE OF REGIONAL ENGINEER						DATE	



Transport
Canada

Transports
Canada

1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

January 29, 2009

Your file Votre référence
828

Our file Notre référence
C-08-0969
SH09-1

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada, T2E 6R7

**SUBJECT: SUPPLEMENTAL TYPE CERTIFICATE NO. SH09-1 – ISSUE 1 DATED
JANUARY 27, 2009 – INSTALLATION OF QUICK RELEASE MOUNTING
PROVISIONS / CARGO BASKET/STEP ON THE RIGHT OR LEFT SIDE OF
THE HELICOPTER – MD HELICOPTERS INC. 600N – ISSUED TO AERO
DESIGN LTD.**

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are the documents bearing the original Transport Canada signatures.

The transfer of this SH09-1 in the name of another person requires the prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 513.25.

The requirements of CAR 561 apply where parts are manufactured and offered for sale. The provisions of CAR 571.06(4) should also be consulted.

A Canadian holder is required to report any service problem experienced with their product. Therefore, should you become aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR V, Subpart 91.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

APPLICANT: AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta, T2E 6R7

DATE: 24 November, 2008
REV. No. 0

CORRESPONDANCE TO:
(If other than applicant)

MAKE: McDonnell Douglas
MODEL: 600N

REGISTRATION: All Applicable
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Mounting Provisions; Installation of Quick Release Cargo Basket

MODEL CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.

MODIFICATION CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
Paragraph	Amdt.				
Subpart B – Flight					
27.27	30	Centre of Gravity Limits	N/A		No change from Type Approval.
27.29	30	Empty Weight and Corresponding C of G	Data specified on inst'n drawing	X	
27.51	30	Takeoff	Flight Test	X	<i>9b</i> <i>per</i> <i>HQ flight test and report.</i>
27.65	30	Climb: All Engines Operating	Flight Test	X	
27.71	30	Gliding Performance	Flight Test	X	
27.75	30	Landing	Flight Test	X	
27.141	30	Flight Characteristics – General	Flight Test	X	
27.143	30	Controllability and Maneuverability	Flight Test	X	
27.151	30	Flight controls	Flight Test	X	
27.161	30	Trim	Flight Test	X	
27.171	30	Stability – General	Flight Test	X	
27.173	30	Longitudinal Stability	Flight Test	X	
27.175	30	Demonstration of Longitudinal Stability	Flight Test	X	
27.177	30	Static Directional Stability	Flight Test	X	
27.241	30	Ground Resonance	Flight Test	X	
27.251	30	Vibration	Flight Test	X	
Subpart C – Strength Requirements					
27.301	30	Loads – Air Drag Loads	Analysis	X	
27.301	30	Loads – Inertia Loads	Compliance with 27.337 and 27.561	X	

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
27.303	30 Factor of Safety	Analysis		X	
27.305	30 Strength and Deformation	Analysis and Test iaw AC 43.13-1A		X	
27.307	30 Proof of Structure	Analysis and Test iaw AC 43.13-1A		X	
27.337(a)	30 Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1A		X	Critical load factor in downward direction.
27.547	30 Main Rotor Structure	Flight Test	XQS		per HQ flight test.
27.561	24 Emergency Landing Conditions	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(i)	24 Emergency Landing Conditions – Up	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(ii)	24 Emergency Landing Conditions – Fwd	N/A			Forward deflection or failure of basket poses no threat to occupants.
27.561(b)3(iii)	24 Emergency Landing Conditions – Side	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(iv)	24 Emergency Landing Conditions – Down	Compliance with 27.337		X	27.337 Maneuvering Load is Critical.
Subpart D – Design and Construction					
27.601	30 Design	Drawings		X	Design is conventional.
27.603	30 Materials	Drawings		X	Materials used are specified in Mil-Hdbk-5H.
27.605	30 Fabrication Methods	Drawings		X	Design is conventional.
27.609	30 Protection of Structure	Drawings		X	
27.611	30 Inspection Provisions	Drawings		X	Design is easy to inspect.
27.613	30 Material Strength Properties and Design Values	Values used as per Mil-Hdbk-5H		X	
27.625	30 Fitting Factor	Analysis		X	
27.783	30 Doors	N/A			Installation does not block doors.
27.787(a)	30 Cargo and Baggage Compartments	Compliance with 23.301 through 307		X	
27.787(b)	30 Cargo and Baggage Compartments	Design		X	Basket is a closed container.
27.787(c), (d)	30 Cargo and Baggage Compartments	N/A			Cargo is external to helicopter.
27.807	30 Emergency Exits	N/A		X	Installation does not block doors.
27.865(a)	30 External Load Attaching Means	Compliance with 27.337		X	
27.865(b), (c)	30 External Load Attaching Means	N/A			
27.865(d)	30 External Load Attaching Means	N/A			Failure of an attachment does not endanger the rotorcraft.
27.1387	30 Position Light System Dihedral Angles	N/A			No change from Type Approval.
27.1401	30 Anticollision Light System	N/A			No change from Type Approval.
Subpart G – Operating Limitations and Information					
27.1505	30 Never Exceed Speed	Flight Test, Flight Manual Supplement	XQS		V _{NE} limits as specified in the existing Flight Manual (155 kts.) per HQ recommend.

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

Airworthiness Requirement		Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
27.1525	30	Kinds of Operation	Flight Manual Supplement	X	} gp	Limited to VFR only.
27.1529	30	Instructions for Continuing Airworthiness	ICA Provided	X		per HQ.
27.1557(a)	30	Miscellaneous Markings and Placards – Baggage Compartments	Placard		X	
27.1557(b)	30	Miscellaneous Markings and Placards	N/A			
27.1557(c)	30	Miscellaneous Markings and Placards	N/A			
27.1557(d)	30	Miscellaneous Markings and Placards	N/A			
27.1581	30	Rotorcraft Flight Manual – General	Flight Manual Supplement	X	} gp	per HQ recommendations as applicable -
27.1583(c)	30	Operating Limitations – Weight and Loading Information	Flight Manual Supplement	X		
27.1585	30	Operating Procedures	Flight Manual Supplement	X		
27.1587	30	Performance Information	Flight Manual Supplement	X		
27.1589	30	Loading Information	Flight Manual Supplement & Placard	X		
Airworthiness Manual Requirements						
527.1581(e)		Rotorcraft Flight Manual – Units	SI and Imperial Units provided in Flight Manual Supplement	X		



Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-1**Issue No.:** 1**Approval Date:** January 27, 2009**Issue Date:** January 27, 2009**Responsible Office:**

Prairie and Northern

Aircraft/Engine Type or Model:

MD HELICOPTERS, INC. 600N

Canadian Type Certificate or Equivalent:

H-95

Description of Type Design Change:

Installation of Quick Release Mounting Provisions / Cargo
Basket / Step on the right or left side of the helicopter.

Installation/Operating Data,
Required Equipment and Limitations:

Configuration A - Quick Release Mounting Provisions:

Installation of Quick Release Mounting Provisions to be completed in accordance with Transport Canada Civil Aviation (TCCA) approved, AERO Design Ltd. Document Control List, DCL828-1, Revision 0, dated 3 December 2008, or later approved revision.

Quick Release Mounting Provisions may remain installed if any other configuration is removed.

Configuration B - Quick Release Cargo Basket Installation:

Installation of Configuration A - Quick Release Mounting Provisions is a mandatory prerequisite for installation of Configuration B. Installation of Quick Release Cargo Basket to be completed in accordance with TCCA approved, AERO Design Ltd. Document Control List, DCL 828-1, Revision 0, dated 3 December 2008, or later approved revision.

...See Continuation Sheet



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

R.A. Goossens
For Minister of Transport

Canada

*(Continuation Sheet)*

Number: SH09-1 Issue 1

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration C - Quick Release Step Installation:

Installation of Configuration A - Quick Release Mounting Provisions is a mandatory prerequisite for Installation of Configuration C. Installation of Quick Release Step to be completed in accordance with TCCA approved, AERO Design Ltd. Document Control List, DCL829-1, Revision 0, dated 3 December 2008, or later approved revision.

TCCA accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA829.90, Revision 0, dated 27 November 2008, or later accepted revision is required with installation of the quick release step.

Cargo Basket Modifications:

Modifications to the cargo basket configuration are eligible in accordance with TCCA approved, AERO Design Ltd. Document Control List DCL704, Revision 4, dated 22 December 2008, or later approved revision. Eligibility limitations are noted on the drawings.

Data Pertinent to All Configurations:

TCCA approved, AERO Design Ltd. Flight Manual Supplement FMS828.91, Revision 0, dated 27 November 2008, or later approved revision is required with this installation.


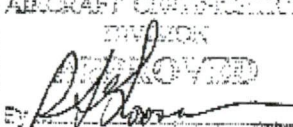

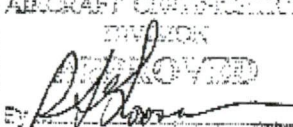

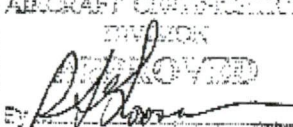
TCCA accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA828.90, Revision 0, dated 27 November 2008, or later accepted revision is required with this installation.

Certification Basis:


As defined in the applicable Type Certificate Data Sheets.

— End —


DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION										
INSTALLATION DOCUMENTS												
82801	Quick Release Cargo Basket Installation	0										
82802	Quick Release Mounting Provisions Installation	0										
ICA828.90	Instructions for Continued Airworthiness	0										
FMS828.91	Flight Manual Supplement	0										
FABRICATION DOCUMENTS												
DCL828-11	Document Control List for Quick Release Cargo Basket	0										
DCL828-12	Document Control List for Mounting Provisions	0										
ENGINEERING DOCUMENTS												
<table border="1"> <tr> <td colspan="2"> APPROVAL:  Transport Canada AIRCRAFT CERTIFICATION DIVISION  APPROVED ACFT No. SH09-1 Appl Date 09-01-27 Cert No. 1 Issue Date 09-01-27 YY-MM-DD </td> <td> ORIGINAL DATE: 3 December, 2008 REVISION DATE: </td> <td> AERO DESIGN LTD. 2019 - 99th Ave NE, Calgary, Alberta, T2E 8R7 Ph. (403) 250-8027 Fax. (403) 250-8333 </td> </tr> <tr> <td colspan="2"> SHEET 1 OF 1 </td> <td> McDonnell Douglas MD600N Quick Release Cargo Basket Installation </td> </tr> <tr> <td colspan="2"> DCL828-1 </td> <td> Rev. 0 </td> </tr> </table>			APPROVAL:  Transport Canada AIRCRAFT CERTIFICATION DIVISION  APPROVED ACFT No. SH09-1 Appl Date 09-01-27 Cert No. 1 Issue Date 09-01-27 YY-MM-DD		ORIGINAL DATE: 3 December, 2008 REVISION DATE:	AERO DESIGN LTD. 2019 - 99th Ave NE, Calgary, Alberta, T2E 8R7 Ph. (403) 250-8027 Fax. (403) 250-8333	SHEET 1 OF 1		McDonnell Douglas MD600N Quick Release Cargo Basket Installation	DCL828-1		Rev. 0
APPROVAL:  Transport Canada AIRCRAFT CERTIFICATION DIVISION  APPROVED ACFT No. SH09-1 Appl Date 09-01-27 Cert No. 1 Issue Date 09-01-27 YY-MM-DD		ORIGINAL DATE: 3 December, 2008 REVISION DATE:	AERO DESIGN LTD. 2019 - 99th Ave NE, Calgary, Alberta, T2E 8R7 Ph. (403) 250-8027 Fax. (403) 250-8333									
SHEET 1 OF 1		McDonnell Douglas MD600N Quick Release Cargo Basket Installation										
DCL828-1		Rev. 0										


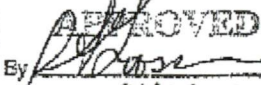
DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82810	Cargo Basket Assembly	0
82811	Basket Body Assembly	0
82812	Basket Lid Assembly	0
82821	Basket Components - Attachment Hoop	0
82827	Basket Components - Placard	0
49210	Basket Components - Hoops	1
49215	Basket Components - Spacer	0
49216	Basket Components - Spacer	0
36255	Handle Assembly	1
36261	Handle Bar Assembly	6
36262	Handle Bracket Assembly	1
36271	Handle Lever	1
36272	Basket Bracket	1
36273	Lid Bracket	1
36274	Bushing	1
36275	Bushing	2
36277	Handle Bar	0
36278	Spring	1
36280, Sheet 1	Brace	2
36280, Sheet 2	Brace	2
ENGINEERING DOCUMENTS		
ER828.01	Engineering Report	0
APPROVAL:		
 Transport Canada Transports Canada AIRCRAFT CERTIFICATION DIVISION APPROVED By <u>[Signature]</u> Appl's No. <u>SH09-1</u> Appl's Date <u>09-01-27</u> Issue No. <u>1</u> Issue Date <u>09-01-27</u> <small>YY-MM-DD</small>		ORIGINAL DATE: 3 December, 2008 REVISION DATE:
SHEET 1 OF 1		AERO DESIGN LTD. 2013 - 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333
McDonnell Douglas MD600N Quick Release Cargo Basket Assembly		Rev.
DCL828-11		0

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82815	Down Tube Assembly	0
82830	Cargo Hook Pad	0
82831	Strut Assemblies	0
82832	Down Tube Fabrication	0
ENGINEERING DOCUMENTS		
ER828.01	Engineering Report	0
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>APPROVAL:</p> <div style="border: 1px solid black; padding: 5px;">  <div style="display: flex; justify-content: space-between;"> <div>Transport Canada</div> <div>Transports Canada</div> </div> <p>AIRCRAFT CERTIFICATION DIVISION</p> <p style="text-align: center; font-weight: bold;">APPROVED</p> <p>By <u>[Signature]</u></p> <p>Appr'l No. <u>SH09-1</u></p> <p>Appr'l Date <u>09-01-27</u></p> <p>Issue No. <u>1</u></p> <p>Issue Date <u>09-01-27</u></p> <p style="font-size: small;">YY-MM-DD</p> </div> </div> <div style="width: 35%;"> <p>ORIGINAL DATE: 3 December, 2008</p> <p>REVISION DATE:</p> </div> <div style="width: 30%;"> <p>AERO DESIGN LTD. 2013 - 35th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333</p> </div> </div>		
SHEET 1 OF 1		
<p style="text-align: center; font-weight: bold;">McDonnell Douglas MD600N Quick Release Mounting Beams</p>		
DCL828-12		Rev. 0

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
70401	Open Forward End Modification (Bell 206L/407 Fixed and McDonnell Douglas MD600N Quick Release Only)	1
70402	Lid Door Modification	1
70403	Auxiliary Latch Modification	3
70404	Open Forward End Modification (Bell 206L/407 Quick Release Only)	1
70405	Lid Step Modification	2
70406	Open Forward End Modification (Eurocopter AS350/AS355 and Bell 206B Quick Release Only)	1
70407	Open Forward End Modification (Eurocopter EC135 Quick Release Only)	0
ENGINEERING DOCUMENTS		
ER704.02	Engineering Report	0
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>APPROVAL</p> <p> Transport Canada Transports Canada</p> <p>AIRCRAFT CERTIFICATION DIVISION</p> <p>APPROVED</p> <p>By </p> <p>App'l No. <u>SH09-1</u></p> <p>App'l Date <u>09-01-27</u></p> <p>Issue No. <u>1</u></p> <p>Issue Date <u>09-01-27</u></p> <p>YY-MM-DD</p> </div> <div style="width: 35%;"> <p>ORIGINAL DATE: 10 May 2006</p> <p>REVISION DATE: 22 December 2008</p> <p>SHEET 1 OF 1</p> </div> <div style="width: 30%;"> <p>AERO DESIGN LTD.</p> <p>2013 - 39th Ave NE, Calgary, Alberta, T2E 6R7</p> <p>Ph. (403) 250-8027</p> <p>Fax. (403) 250-8333</p> <p>Cargo Basket Modifications</p> </div> </div>		
DCL704		Rev. 4

MCDONNELL DOUGLAS MD600N

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the INSTALLATION of the AERO DESIGN QUICK RELEASE CARGO BASKET AND/OR QUICK RELEASE STEP

Supplemental Type Certificate No. SH09-1

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the McDonnell Douglas MD600N when fitted with the Quick Release Cargo Basket or Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.


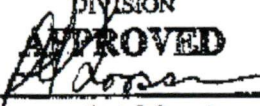
	Transport Canada	Transports Canada
AIRCRAFT CERTIFICATION DIVISION		
APPROVED		
By 		
Appl No. <u>SH09-1</u>		
Appl Date <u>09-01-27</u>		
Issue No. <u>1</u>		
Issue Date <u>09-01-27</u>		
YY-MM-DD		

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I	Limitations	3
II	Normal Procedures	3
III	Emergency Procedures	3
IV	Performance	4
V	Weight and Balance	5
VI	Installation / removal instructions	7

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	27 Nov 2008	Original Issue		

I LIMITATIONS

1. The maximum load in the AERO Design Ltd. Quick Release Cargo Basket is 200 lb. (90.5 kg).
2. Only one basket may be installed on the helicopter, on the right or left side.
3. Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
4. Maximum V_{NE} is 135 KIAS, or as reduced based on rotorcraft V_{NE} placards. If the V_{NE} in the basic rotorcraft flight manual or approved supplement is more restrictive, the lower V_{NE} shall apply.
5. Quick Release Step may be installed on the right or left side. Step may be installed on the inboard side of the beams (stowed position) when the basket is installed.
6. Flight operations using the cargo hook are prohibited while there is cargo loaded in the Cargo Basket.

II NORMAL PROCEDURES

1. Pre-flight inspections:
 - a) Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - c) Ensure the basket is locked in position on the beams. Pull up on the forward and aft end of the basket to check.
 - d) Ensure the step is locked in position on the beams. Pull up on the forward and aft end of the step to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

1. Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket installed.
2. Climb performance will be reduced by up to 150 fpm with the Cargo Basket installed.

V WEIGHT AND BALANCE

1. The following weight and balance is for the Quick Release Cargo Basket configuration, installed in accordance with drawing 82801.

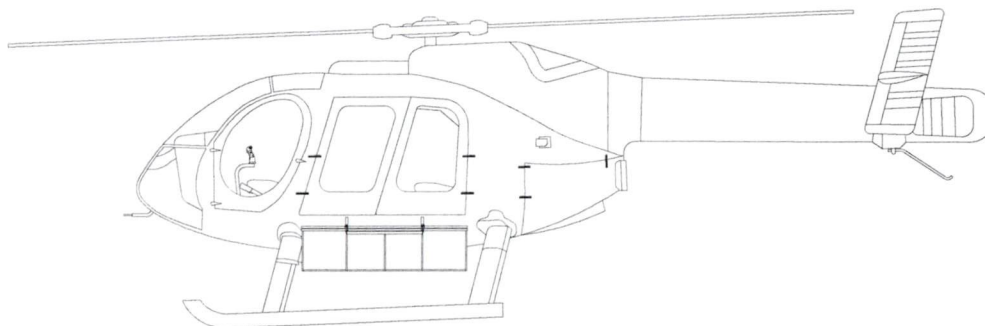


Figure 1 – Quick Release Cargo Basket Configuration

Quick Release Cargo Basket Configuration

Item	Weight	Longitudinal		Lateral ³	
		Arm	Moment	Arm	Moment
Basket Only ¹	45.0 lb	82.1 in	3 694.5 in*lb	- 39.8 in	- 1 788.8 in*lb
	20.4 kg	2085 mm	42 534 mm*kg	- 1011 mm	- 20 624 mm*kg
Cargo ² (MAX)	200 lb	82.1 in	16 420 in*lb	- 39.8 in	- 7 960 in*lb
	90.5 kg	2085 mm	411 991 mm*kg	- 1011 mm	- 91 496 mm*kg

¹ Weight and balance is for Cargo Basket only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

² Longitudinal and Lateral moment arms are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

³ Lateral arm is positive when installed on the right.

2. The following weight and balance is for the quick release step configuration, installed in accordance with drawing 82901.

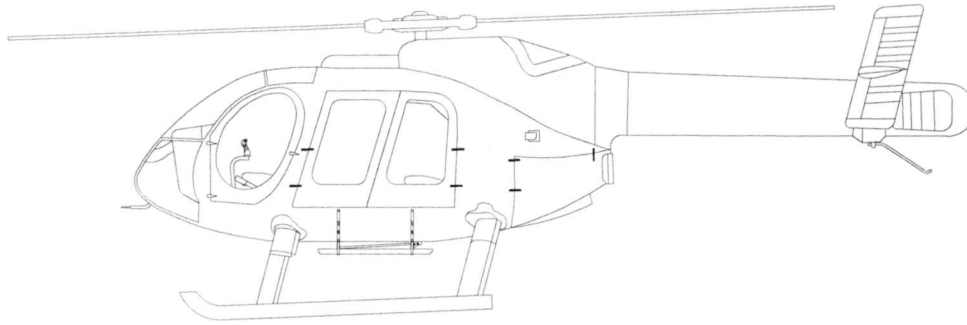


Figure 2 – Quick Release Step Configuration

Quick Release Step Configuration – Outboard Position

Item	Weight	Longitudinal		Lateral ²	
		Arm	Moment	Arm	Moment
Step Only ¹	5.0 lb	82.1 in	410.5 in*lb	- 29.5 in	- 147.5 in*lb
	2.3 kg	2085 mm	4 796 mm*kg	- 749 mm	- 1 723 mm*kg

Quick Release Step Configuration – Inboard Position (Stowed)

Item	Weight	Longitudinal		Lateral ²	
		Arm	Moment	Arm	Moment
Step Only ¹	5.0 lb	82.1 in	410.5 in*lb	- 23.7 in	- 118.5 in*lb
	2.3 kg	2085 mm	4 796 mm*kg	- 602 mm	- 1 385 mm*kg

¹ Weight and balance is for Step only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

² Lateral arm is positive when installed on the right.

VI INSTALLATION / REMOVAL INSTRUCTIONS

The Quick Release Mounting Beams are installed in accordance with drawing 82802. The Quick Release Basket is installed in accordance with drawing 82801. The Quick Release Step is installed in accordance with drawing 82901. Removal of the basket or step leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket or step and which weight and balance amendment is in effect is required.

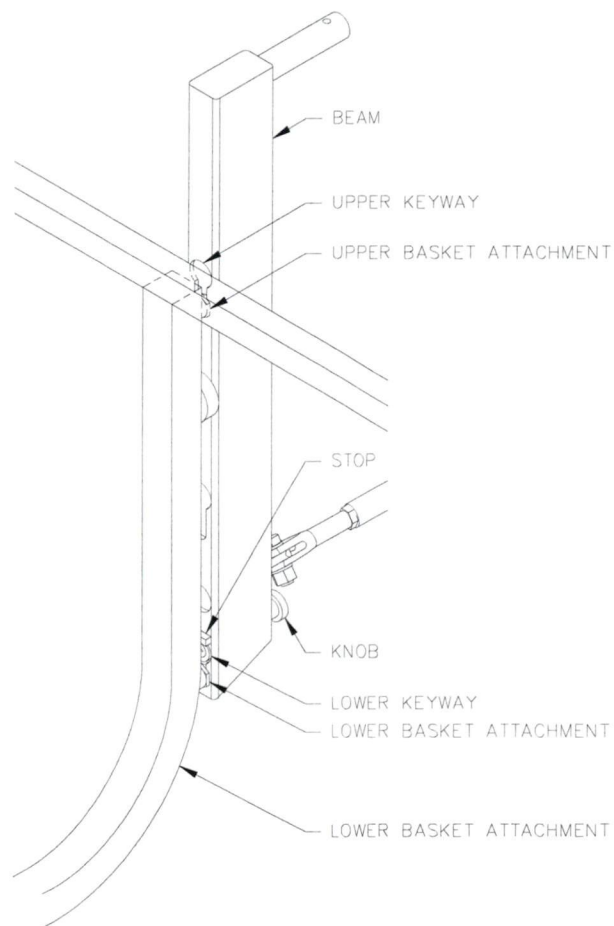


Figure 3 – Basket Attachment

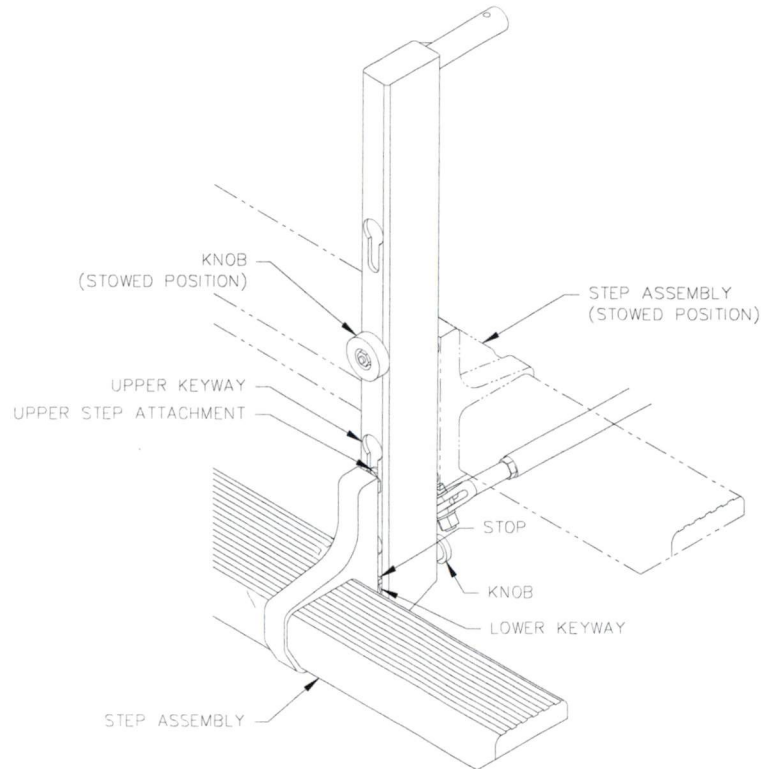


Figure 4 – Step Attachment

Installation and removal instructions are the same for the Quick Release Basket and Quick Release Step Assembly.

1. Installation - Refer to Figure 3/4.
 1. Set upper attachment into upper keyway on forward and aft beams.
 2. At forward end, lift basket or step until lower attachment fitting hits stop over keyway. Push fitting into keyway and slide down until locked. Repeat for aft end.
2. Removal - Refer to Figure 3/4.
 1. Pull knob at bottom end of forward beam and lift basket or step until lower attachment fitting is free of keyway. Keep upper attachment in keyway in beam. Repeat for aft end.
 2. Lift basket or step until upper attachments are out of keyways in beams and remove from helicopter.



James. ovhl
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Transport
CanadaTransports
Canada1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

January 29, 2009

Aero Design Ltd.
2013 38th Avenue North East
Calgary, Alberta
Canada, T2E 6R7Your file Votre référence
828Our file Notre référence
C-08-0969
SH09-1

**SUBJECT: SUPPLEMENTAL TYPE CERTIFICATE NO. SH09-1 – ISSUE 1 DATED
JANUARY 27, 2009 – INSTALLATION OF QUICK RELEASE MOUNTING
PROVISIONS / CARGO BASKET/STEP ON THE RIGHT OR LEFT SIDE OF
THE HELICOPTER – MD HELICOPTERS INC. 600N – ISSUED TO AERO
DESIGN LTD.**

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are the documents bearing the original Transport Canada signatures.

The transfer of this SH09-1 in the name of another person requires the prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 513.25.

The requirements of CAR 561 apply where parts are manufactured and offered for sale. The provisions of CAR 571.06(4) should also be consulted.

A Canadian holder is required to report any service problem experienced with their product. Therefore, should you become aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR V, Subpart 91.

Yours truly,

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

Canada

Transport
CanadaTransports
Canada#1100, 9700 Jasper Avenue
Edmonton, Alberta
T5J 4E6FAXED
21 Pages

Jan 29 / 09

FACSIMILE

Date 29-Jan-09

No. of pages (including cover sheet) 21

Our File: C-08-0969

SH09-1

Your File: 828

To: AERO DESIGN LTD.

ATTN: JEFF CLARK,
CET

Phone (403) 250-8027

Fax Phone (403) 250-8333

From Debbie Dubyk

Phone 780-495-7412

Fax Phone 780-495-7963

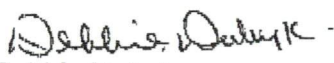
SUBJECT: SUPPLEMENTAL TYPE CERTIFICATE SH09-1 – ISSUE 1 DATED JANUARY 27, 2009 – INSTALLATION OF QUICK RELEASE MOUNTING PROVISIONS / CARGO BASKET / STEP ON THE RIGHT OR LEFT SIDE OF THE HELICOPTER MD HELICOPTERS, INC 600N – ISSUED TO AERO DESIGN LTD.

Hi Jeff:

Please find attached an advance copy of the approved documents pertaining to Supplemental Type Certificate SH09-1, Issue 1, dated January 27, 2009.

The original signed documents will be forthcoming to you in the mail.

Thanks


Debbie Dubyk

Operational Support Assistant

Canada

AERO Design Ltd.

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

 Page 1 of 3
CP828

 APPLICANT: AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta, T2E 6R7

 DATE: 24 November, 2008
REV. No. 0

 CORRESPONDANCE TO:
(If other than applicant)

 MAKE: McDonnell Douglas
MODEL: 600N

 REGISTRATION: All Applicable
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Mounting Provisions; Installation of Quick Release Cargo Basket

 MODEL CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.
MODIFICATION CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
Paragraph	Amdt.				
Subpart B – Flight					
27.27	30	Centre of Gravity Limits	N/A		No change from Type Approval.
27.29	30	Empty Weight and Corresponding C of G	Data specified on inst'n drawing	X	
27.51	30	Takeoff	Flight Test	X	} <i>per HQ flight test and report.</i>
27.65	30	Climb: All Engines Operating	Flight Test	X	
27.71	30	Gliding Performance	Flight Test	X	
27.75	30	Landing	Flight Test	X	
27.141	30	Flight Characteristics – General	Flight Test	X	
27.143	30	Controllability and Maneuverability	Flight Test	X	
27.151	30	Flight controls	Flight Test	X	
27.161	30	Trim	Flight Test	X	
27.171	30	Stability – General	Flight Test	X	
27.173	30	Longitudinal Stability	Flight Test	X	
27.175	30	Demonstration of Longitudinal Stability	Flight Test	X	
27.177	30	Static Directional Stability	Flight Test	X	
27.241	30	Ground Resonance	Flight Test	X	
27.251	30	Vibration	Flight Test	X	
Subpart C – Strength Requirements					
27.301	30	Loads – Air Drag Loads	Analysis	X	
27.301	30	Loads – Inertia Loads	Compliance with 27.337 and 27.561	X	

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
27.303	30 Factor of Safety	Analysis		X	
27.305	30 Strength and Deformation	Analysis and Test iaw AC 43.13-1A		X	
27.307	30 Proof of Structure	Analysis and Test iaw AC 43.13-1A		X	
27.337(a)	30 Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1A		X	Critical load factor in downward direction.
27.547	30 Main Rotor Structure	Flight Test	X	X	per the flight test.
27.561	24 Emergency Landing Conditions	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(i)	24 Emergency Landing Conditions – Up	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(ii)	24 Emergency Landing Conditions – Fwd	N/A			Forward deflection or failure of basket poses no threat to occupants.
27.561(b)3(iii)	24 Emergency Landing Conditions – Side	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(iv)	24 Emergency Landing Conditions – Down	Compliance with 27.337		X	27.337 Maneuvering Load is Critical.
Subpart D – Design and Construction					
27.601	30 Design	Drawings		X	Design is conventional.
27.603	30 Materials	Drawings		X	Materials used are specified in Mil-Hdbk-5H.
27.605	30 Fabrication Methods	Drawings		X	Design is conventional.
27.609	30 Protection of Structure	Drawings		X	
27.611	30 Inspection Provisions	Drawings		X	Design is easy to inspect.
27.613	30 Material Strength Properties and Design Values	Values used as per Mil-Hdbk-5H		X	
27.625	30 Fitting Factor	Analysis		X	
27.783	30 Doors	N/A			Installation does not block doors.
27.787(a)	30 Cargo and Baggage Compartments	Compliance with 23.301 through 307		X	
27.787(b)	30 Cargo and Baggage Compartments	Design		X	Basket is a closed container.
27.787(c), (d)	30 Cargo and Baggage Compartments	N/A			Cargo is external to helicopter.
27.807	30 Emergency Exits	N/A		X	Installation does not block doors.
27.865(a)	30 External Load Attaching Means	Compliance with 27.337		X	
27.865(b), (c)	30 External Load Attaching Means	N/A			
27.865(d)	30 External Load Attaching Means	N/A			Failure of an attachment does not endanger the rotorcraft.
27.1387	30 Position Light System Dihedral Angles	N/A			No change from Type Approval.
27.1401	30 Anticollision Light System	N/A			No change from Type Approval.
Subpart G – Operating Limitations and Information					
27.1505	30 Never Exceed Speed	Flight Test, Flight Manual Supplement	X	X	V _{NE} limits as specified in the existing Flight Manual (155 kts.) per HQ recommend.

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAK	Comments
27.1525	30 Kinds of Operation	Flight Manual Supplement	X		Limited to VFR only.
27.1529	30 Instructions for Continuing Airworthiness	ICA Provided	X		per HQ.
27.1557(a)	30 Miscellaneous Markings and Placards – Baggage Compartments	Placard		X	
27.1557(b)	30 Miscellaneous Markings and Placards	N/A			
27.1557(c)	30 Miscellaneous Markings and Placards	N/A			
27.1557(d)	30 Miscellaneous Markings and Placards	N/A			
27.1581	30 Rotorcraft Flight Manual – General	Flight Manual Supplement	X		
27.1583(c)	30 Operating Limitations – Weight and Loading Information	Flight Manual Supplement	X		
27.1585	30 Operating Procedures	Flight Manual Supplement	X		
27.1587	30 Performance Information	Flight Manual Supplement	X		
27.1589	30 Loading Information	Flight Manual Supplement & Placard	X		Placard installed on basket lid
Airworthiness Manual Requirements					
527.1581(e)	Rotorcraft Flight Manual – Units	SI and Imperial Units provided in Flight Manual Supplement	X		

AERO DESIGN LTD.

FMS828.91

MCDONNELL DOUGLAS MD600N



ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
for the
INSTALLATION of the AERO DESIGN
QUICK RELEASE CARGO BASKET
AND/OR QUICK RELEASE STEP

Supplemental Type Certificate No. SH09-1

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the McDonnell Douglas MD600N when fitted with the Quick Release Cargo Basket or Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.

	Transport Canada	Transports Canada
AIRCRAFT CERTIFICATION DIVISION		
APPROVED		
By 		
App'l No. <u>SH09-1</u>		
App'l Date <u>09-01-27</u>		
Issue No. <u>1</u>		
Issue Date <u>09-01-27</u>		
YY-MM-DD		

Revision 0
27 November, 2008

Page 1
TRANSPORT CANADA APPROVED

AERO DESIGN LTD.

FMS828.91

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Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	27 Nov 2008	Original Issue		

Revision 0
27 November, 2008

Page 2

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I LIMITATIONS

1. The maximum load in the AERO Design Ltd. Quick Release Cargo Basket is 200 lb. (90.5 kg).
2. Only one basket may be installed on the helicopter, on the right or left side.
3. Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
4. Maximum V_{NE} is 135 KIAS, or as reduced based on rotorcraft V_{NE} placards. If the V_{NE} in the basic rotorcraft flight manual or approved supplement is more restrictive, the lower V_{NE} shall apply.
5. Quick Release Step may be installed on the right or left side. Step may be installed on the inboard side of the beams (stowed position) when the basket is installed.
6. Flight operations using the cargo hook are prohibited while there is cargo loaded in the Cargo Basket.

II NORMAL PROCEDURES

1. Pre-flight Inspections:
 - a) Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - c) Ensure the basket is locked in position on the beams. Pull up on the forward and aft end of the basket to check.
 - d) Ensure the step is locked in position on the beams. Pull up on the forward and aft end of the step to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

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IV PERFORMANCE

1. Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket installed.
2. Climb performance will be reduced by up to 150 fpm with the Cargo Basket Installed.

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FMS828.91

V WEIGHT AND BALANCE

1. The following weight and balance is for the Quick Release Cargo Basket configuration, installed in accordance with drawing 82801.

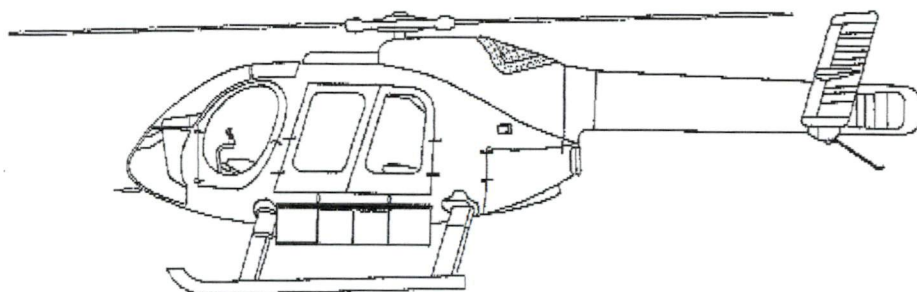


Figure 1 – Quick Release Cargo Basket Configuration

Quick Release Cargo Basket Configuration

Item	Weight	Longitudinal		Lateral ³	
		Arm	Moment	Arm	Moment
Basket Only ¹	45.0 lb	82.1 in	3 694.5 in*lb	- 39.8 in	- 1 788.8 in*lb
	20.4 kg	2085 mm	42 534 mm*kg	- 1011 mm	- 20 624 mm*kg
Cargo ² (MAX)	200 lb	82.1 in	16 420 in*lb	- 39.8 in	- 7 960 in*lb
	90.5 kg	2085 mm	411 991 mm*kg	- 1011 mm	- 91 496 mm*kg

¹ Weight and balance is for Cargo Basket only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

² Longitudinal and Lateral moment arms are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

³ Lateral arm is positive when installed on the right.

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2. The following weight and balance is for the quick release step configuration, installed in accordance with drawing 82901.

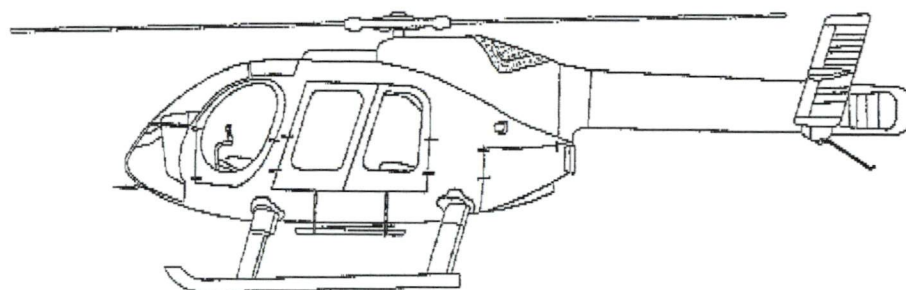


Figure 2 – Quick Release Step Configuration

Quick Release Step Configuration – Outboard Position

Item	Weight	Longitudinal		Lateral ²	
		Arm	Moment	Arm	Moment
Step Only ¹	5.0 lb	82.1 in	410.5 in*lb	- 29.5 in	- 147.5 in*lb
	2.3 kg	2085 mm	4 796 mm*kg	- 749 mm	- 1 723 mm*kg

Quick Release Step Configuration – Inboard Position (Stowed)

Item	Weight	Longitudinal		Lateral ²	
		Arm	Moment	Arm	Moment
Step Only ¹	5.0 lb	82.1 in	410.5 in*lb	- 23.7 in	- 118.5 in*lb
	2.3 kg	2085 mm	4 796 mm*kg	- 602 mm	- 1 385 mm*kg

¹ Weight and balance is for Step only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

² Lateral arm is positive when installed on the right.

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VI INSTALLATION / REMOVAL INSTRUCTIONS

The Quick Release Mounting Beams are installed in accordance with drawing 82802. The Quick Release Basket is installed in accordance with drawing 82801. The Quick Release Step is installed in accordance with drawing 82901. Removal of the basket or step leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket or step and which weight and balance amendment is in effect is required.

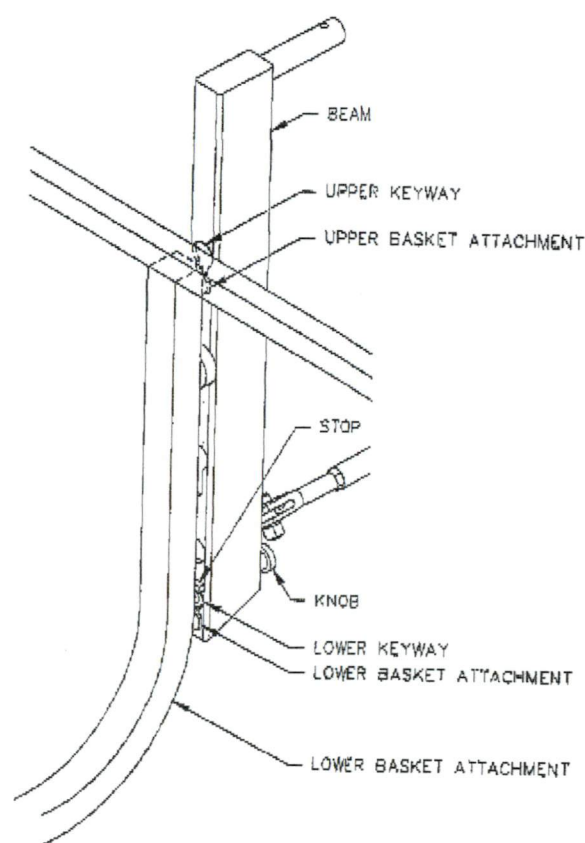


Figure 3 – Basket Attachment

AERO DESIGN LTD.

FMS828.91

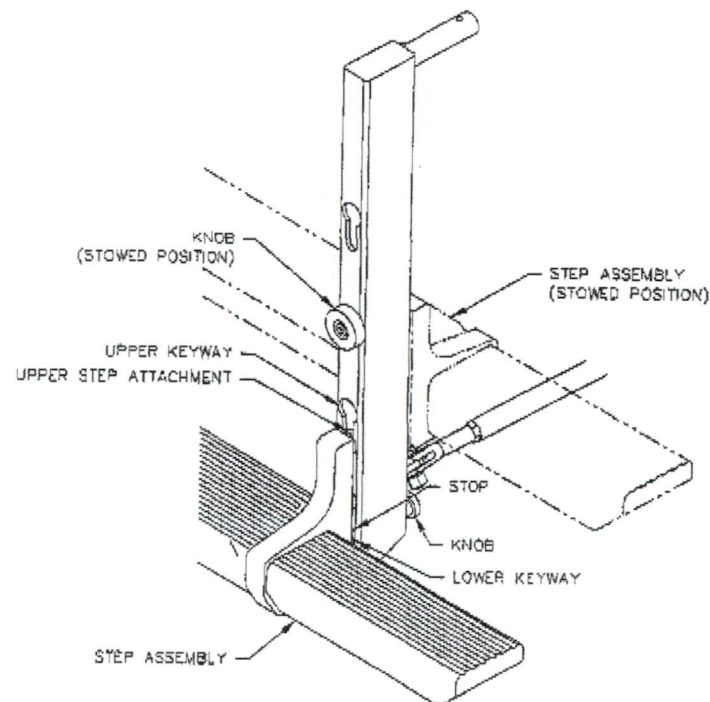
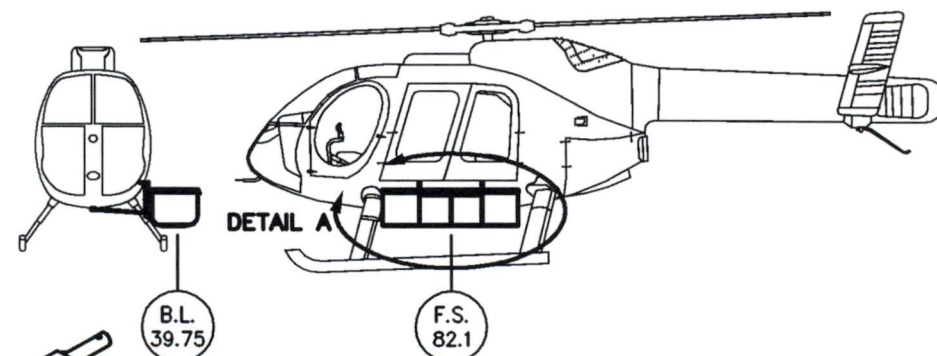
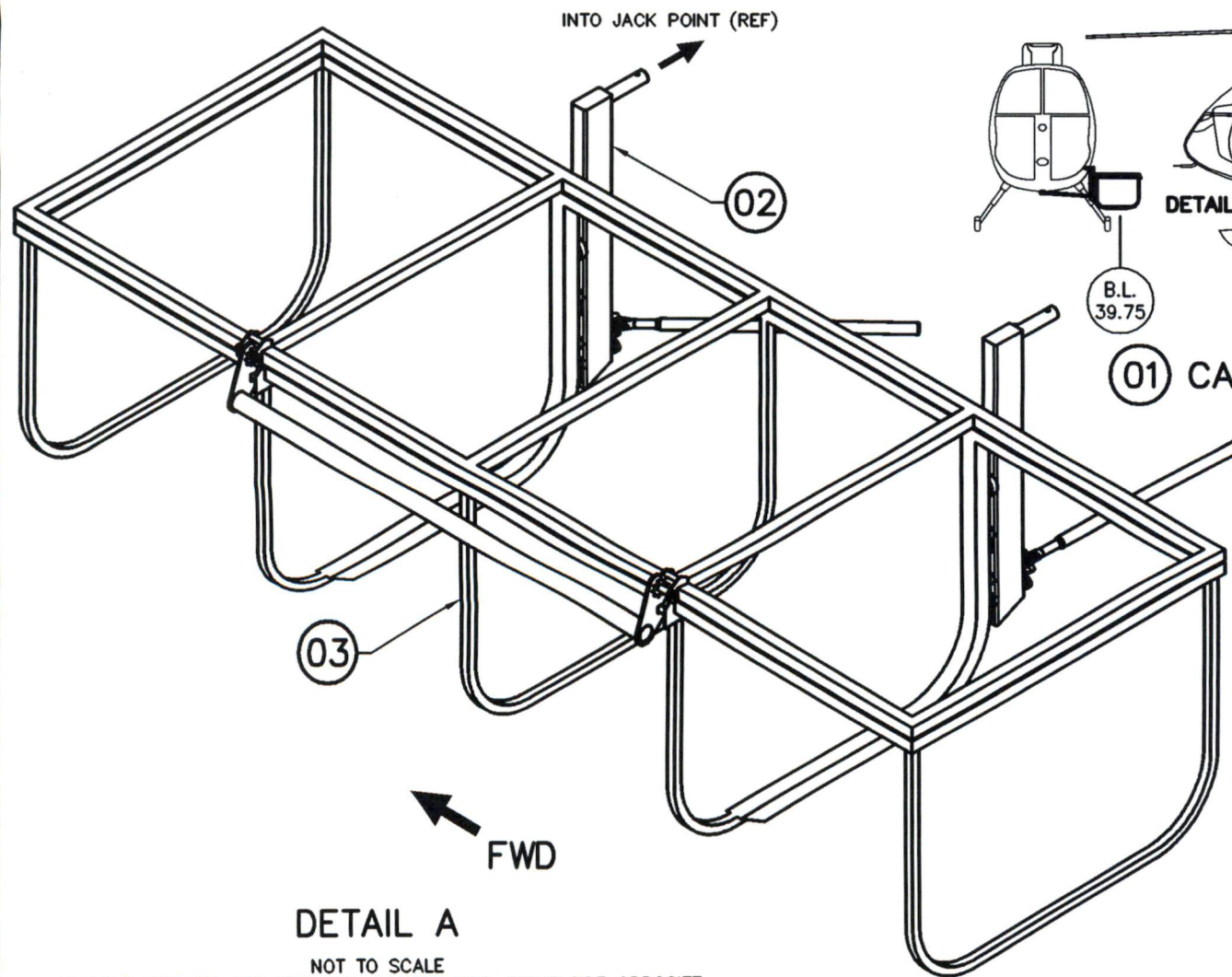


Figure 4 - Step Attachment

Installation and removal instructions are the same for the Quick Release Basket and Quick Release Step Assembly.

1. Installation - Refer to Figure 3/4.
 1. Set upper attachment into upper keyway on forward and aft beams.
 2. At forward end, lift basket or step until lower attachment fitting hits stop over keyway. Push fitting into keyway and slide down until locked. Repeat for aft end.
2. Removal - Refer to Figure 3/4.
 1. Pull knob at bottom end of forward beam and lift basket or step until lower attachment fitting is free of keyway. Keep upper attachment in keyway in beam. Repeat for aft end.
 2. Lift basket or step until upper attachments are out of keyways in beams and remove from helicopter.



01 CARGO BASKET INSTALLATION
LEFT SIDE SHOWN, RIGHT SIDE IDENTICAL

DETAIL A

NOT TO SCALE
LOOKING INBOARD AND FORWARD AT LEFT SIDE, RIGHT SIDE OPPOSITE
MESH NOT SHOWN FOR CLARITY

APPROVALS		DATE		<div>AERO DESIGN LTD.</div> <div>CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8533 www.aerodesign.ca</div>					
DRAWN: JEFF CLARKE		17 NOV 2008							
CHECKED: E. BURGOIN									
<div>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:</div> <div><div>DECIMALS</div><div>ANGLES</div></div> <div><div>X.XXX ±0.010</div><div>±1/2°</div></div> <div><div>X.XX ±0.03</div></div> <div><div>X.X ±0.1</div></div>				<div>MCDONNELL DOUGLAS MD600N QUICK RELEASE CARGO BASKET INSTALLATION</div>					
				NOT TO SCALE		DWG. SIZE	DWG. NO.	REV.	
				SHEET 1 OF 2		A4	82801	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	*	*	*

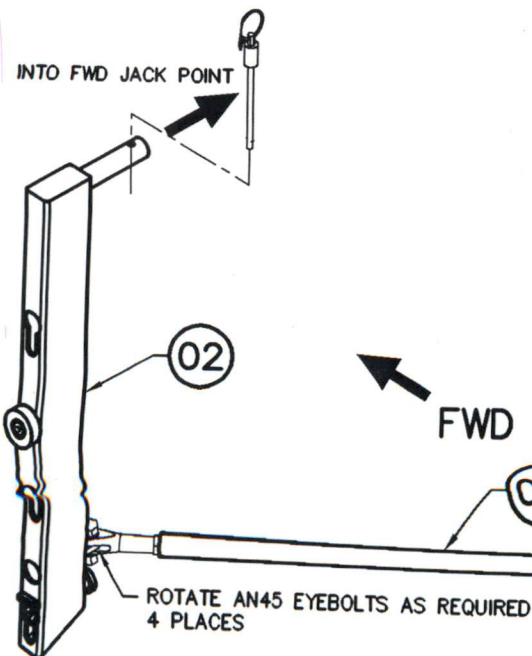
NOTES

1. INSTALLATION OF THE QUICK RELEASE MOUNTING PROVISIONS IN ACCORDANCE WITH DRAWING 82802 IS REQUIRED PRIOR TO THIS INSTALLATION.
2. INSTALLATION MAY BE APPLIED TO THE LEFT OR RIGHT SIDE, NOT BOTH. LATERAL ARM IS POSITIVE WHEN INSTALLED ON THE RIGHT.
3. REFER TO INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA828.90 FOR MAINTENANCE INFORMATION.
4. REFER TO FLIGHT MANUAL SUPPLEMENT FMS828.91 FOR OPERATING LIMITATIONS.

WEIGHT AND BALANCE

		LONGITUDINAL			LATERAL	
ITEM	DESCRIPTION	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN)	ARM (IN)	MOMENT (LB-IN)
02	QUICK RELEASE PROVISIONS	11.2	85.6	958.7	-20.5	-229.6
03	CARGO BASKET ASSEMBLY	45.0	82.1	3694.5	-39.8	-1788.8
01	CARGO BASKET INSTALLATION	56.2	82.8	4653.2	-35.9	-2018.4
1	82810-01	03	CARGO BASKET ASSEMBLY			
1	82802-01	02	QUICK RELEASE PROVISIONS INSTALLATION			
	82801-01	01	QUICK RELEASE CARGO BASKET INSTALLATION			
01	PART NO.	ITEM	DESCRIPTION			
QTY	LIST OF MATERIALS					

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	DRAWN: JEFF CLARKE		17 NOV 2008						
	CHECKED: E. BURGOIN				MCDONNELL DOUGLAS MD600N QUICK RELEASE CARGO BASKET INSTALLATION				
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:								
	DECIMALS X.XXX ±0.010 X.XX ±0.03 X.X ±0.1		ANGLES ±1/2°						
		NOT TO SCALE		DWG. SIZE A4		DWG. NO. 82801		REV. 0	
		SHEET 2 OF 2							

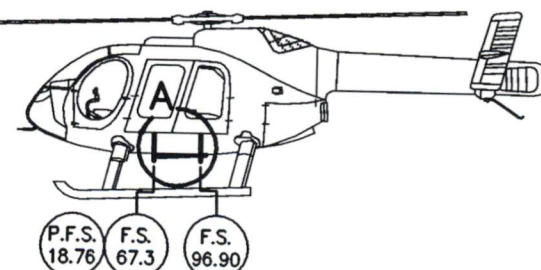


DETAIL A

NOT TO SCALE
LOOKING INBOARD AND FORWARD AT LEFT SIDE
RIGHT SIDE OPPOSITE

01 PROVISIONS INSTALLATION

LEFT SIDE SHOWN, RIGHT SIDE IDENTICAL



INTO EXISTING CARGO
HOOK PROVISIONS
(4 PLACES)

HELICOPTER

LOCKWIRE BOLTS TOGETHER USING
MS20995C20E LOCKWIRE

WITH CARGO HOOK INSTALLED:
NAS1304-29H
AN960-416 WASHER

NO CARGO HOOK INSTALLED:
NAS1304-26H
AN960-416 WASHER

SEE NOTE 3

ADJUST LENGTH OF STRUT AS REQUIRED
LOCK END FITTING IN PLACE WITH CHECK NUT

AN5-7A BOLT
AN960-516 WASHER (2)
MS21044N5 NUT
2 PLACES PER STRUT

APPROVALS		DATE		<div>AERO DESIGN LTD.</div> <div>CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca</div>					
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CHECKED: E. BURGOIN									
<div>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:</div> <div>DECIMALS ANGLES</div> <div>X.XXX ±0.010 ±1/2°</div> <div>X.XX ±0.03</div> <div>X.X ±0.1</div>				<div>MCDONNELL DOUGLAS MD600N</div> <div>QUICK RELEASE PROVISIONS</div> <div>INSTALLATION</div>					
				NOT TO SCALE		DWG. SIZE	DWG. NO.	REV.	
				SHEET 1 OF 2		A4	82802	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	*	*	*

NOTES

1. INSTALLATION MAY BE APPLIED TO THE LEFT OR RIGHT SIDE. LATERAL ARM IS POSITIVE ON RIGHT SIDE INSTALLATION.
2. THIS INSTALLATION IS COMPATIBLE WITH THE 3000 LB. CARGO HOOK INSTALLATION (P/N 369H90072-525)
3. ENSURE FULL ENGAGEMENT OF NAS1304 BOLTS. BOLT LENGTH MAY BE INCREASED IF REQUIRED.
NAS6604 BOLTS MAY BE USED AS ALTERNATE IF REQUIRED.
4. INSTALL ALL HARDWARE USING STANDARD SHOP PRACTICES AS OUTLINED IN AC43.13-1B,
CHAPTER 7 "AIRCRAFT HARDWARE, CONTROL CABLES, AND TURNBUCKLES"
OR STANDARD AIRCRAFT WORKERS MANUAL, SECTION 7 "SHOP PRACTICES".
5. TORQUE 5/16" BOLTS TO 60-85 INCH-POUNDS.
TORQUE 1/4" BOLTS TO 30-40 INCH-POUNDS.

WEIGHT AND BALANCE						
ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL		LATERAL	
			ARM (IN)	MOMENT (LB-IN)	ARM (IN)	MOMENT (LB-IN)
01	QUICK RELEASE PROVISIONS	11.2	85.6	958.7	-20.5	-229.6
2	LW1325-1		PIN			
A/R	MS20995C20E		LOCKWIRE			
A/R	AN960-416		WASHER			
4	NAS1304-26H		BOLT (ALTERNATE - NO HOOK)			
4	NAS1304-29H		BOLT			
1	MS21044N5		NUT			
1	AN960-516		WASHER			
4	AN5-7A		BOLT			
1	82831-02	05	AFT STRUT			
1	82831-01	04	FORWARD STRUT			
1	82830-01	03	CARGO HOOK PAD			
2	82815-01	02	BEAM ASSEMBLY			
	82802-01	01	QUICK RELEASE PROVISIONS INSTALLATION			
01	PART NO.	ITEM	DESCRIPTION			
QTY	LIST OF MATERIALS					

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	DRAWN: JEFF CLARKE		17 NOV 2008									
	CHECKED: E. BURGOIN				<h3 style="text-align: center;">MCDONNELL DOUGLAS MD600N QUICK RELEASE PROVISIONS INSTALLATION</h3>							
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2" X.XX ±0.03 X.X ±0.1								NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
									SHEET 2 OF 2	A4	82802	0

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS		AE-100 No.: AE828-1 Initial Issue Date: 14 January, 2009 Revision: 0 Revision Date:	
Aircraft Mfr: MD Helicopters Inc. Aircraft Model: MD600N Registration: ALL ELIGIBLE	Model / Type Airplane <input type="checkbox"/> Helicopter <input checked="" type="checkbox"/> Appliance <input type="checkbox"/> Component <input type="checkbox"/>	Approval No.: SH09- 1 Delegation No.: 290M Delegate Name: E. Burgoin Company: AERO Design Ltd.	

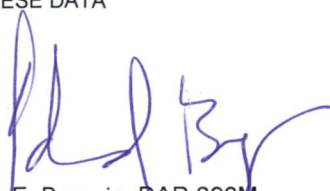
LIST OF APPROVED REPORTS AND DATA

Document Number	Revision	Document Title	Compliance Status
DCL828-1 82801 82802	0 0 0	Document Control List and all documents referred to therein Quick Release Cargo Basket Installation Quick Release Mounting Provisions Installation	As per Compliance Program, CP828, Revision 0
DATA APPROVED BY TRANSPORT CANADA			
ICA828.90 FMS828.91	0 0	Instructions for Continued Airworthiness Flight Manual Supplement	

CERTIFICATION

UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIREMENTS.

I THEREFORE ☐ RECOMMEND FOR APPROVAL OF THESE DATA
☒ APPROVE THESE DATA


 E. Burgoin, DAR 290M

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS			AE-100 No.: AE828-11 Initial Issue Date: 14 January, 2009 Revision: 0 Revision Date: Approval No.: SH09-1 Delegation No.: 290M Delegate Name: E. Burgoin Company: AERO Design Ltd.
Aircraft Mfr: MD Helicopters Inc. Aircraft Model: MD600N Registration: ALL ELIGIBLE	Model / Type Airplane <input type="checkbox"/> Helicopter <input checked="" type="checkbox"/> Appliance <input type="checkbox"/> Component <input type="checkbox"/>		

LIST OF APPROVED REPORTS AND DATA			
Document Number	Revision	Document Title	Compliance Status
DCL828-11	0	Document Control List and all documents referred to therein	As per Compliance Program, CP828, Revision 0
ER828.01	0	Engineering Report	
82810	0	Cargo Basket Assembly	
82811	0	Basket Body Assembly	
82812	0	Basket Lid Assembly	
82821	0	Basket Components - Attachment Hoop	
82827	0	Basket Components - Placard	
49210	1	Basket Components - Hoops	
49215	0	Basket Components - Spacer	
49216	0	Basket Components - Spacer	
36255	1	Handle Assembly	
36261	6	Handle Bar Assembly	
36262	1	Handle Bracket Assembly	
36271	1	Handle Lever	
36272	1	Basket Bracket	
36273	1	Lid Bracket	
36274	1	Bushing	
36275	2	Bushing	
36277	0	Handle Bar	
36278	1	Spring	
36280	2	Brace	
DATA APPROVED BY TRANSPORT CANADA			

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FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS		AE-100 No.: AE828-12 Initial Issue Date: 14 January, 2009 Revision: 0 Revision Date:
Aircraft Mfr: MD Helicopters Inc. Aircraft Model: MD600N Registration: ALL ELIGIBLE	Model / Type Airplane <input type="checkbox"/> Helicopter <input checked="" type="checkbox"/> Appliance <input type="checkbox"/> Component <input type="checkbox"/>	Approval No.: SH09-1 Delegation No.: 290M Delegate Name: E. Burgoin Company: AERO Design Ltd.

LIST OF APPROVED REPORTS AND DATA

Document Number	Revision	Document Title	Compliance Status
DCL828-12 ER828.01	0 0	Document Control List and all documents referred to therein Engineering Report	As per
82815	0	Down Tube Assembly	Compliance Program,
82830	0	Cargo Hook Pad	CP828,
82831	0	Strut Assemblies	Revision 0
82832	0	Down Tube Fabrication	
DATA APPROVED BY TRANSPORT CANADA			

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 E. Burgoin, DAR 290M

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS		AE-100 No.: AE704 Initial Issue Date: 25 May, 2006 Revision: 4 Revision Date: 14 January 2009 Approval No.: SH09-1 Delegation No.: 290M Delegate Name: E. Burgoin Classification of Designee: Employer: AERO Design Ltd.	
Aircraft Mfr: MD Helicopters Aircraft Model: MD600N Registration: All Eligible	Model Type Airplane <input type="checkbox"/> Helicopter <input checked="" type="checkbox"/> Appliance <input type="checkbox"/> Component <input type="checkbox"/>		
LIST OF APPROVED REPORTS AND DATA			
Document Number	Document Title		Compliance Status
DCL704	Revision 4	Document Control List and all documents referred to therein	
70401	Revision 1	Open Forward End Modification	
70402	Revision 1	Lid Door Modification	
70403	Revision 3	Auxiliary Latch Modification	
70404	Revision 1	Open Front Modification	
70405	Revision 2	Lid Step Modification	
		DATA APPROVED BY TRANSPORT CANADA	
CERTIFICATION UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIREMENTS.			
I THEREFORE <input type="checkbox"/> RECOMMEND FOR APPROVAL OF THESE DATA <input checked="" type="checkbox"/> APPROVE THESE DATA			
E. Burgoin, DAR 290M			

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82801	Quick Release Cargo Basket Installation	0
82802	Quick Release Mounting Provisions Installation	0
ICA828.90	Instructions for Continued Airworthiness	0
FMS828.91	Flight Manual Supplement	0
FABRICATION DOCUMENTS		
DCL828-11	Document Control List for Quick Release Cargo Basket	0
DCL828-12	Document Control List for Mounting Provisions	0
ENGINEERING DOCUMENTS		
APPROVAL:	ORIGINAL DATE: 3 December, 2008 REVISION DATE:	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333
	SHEET 1 OF 1	McDonnell Douglas MD600N Quick Release Cargo Basket Installation
	<div style="display: flex; justify-content: space-between; align-items: center;"> DCL828-1 <div style="text-align: right;"> Rev. 0 </div> </div>	
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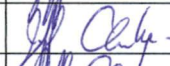
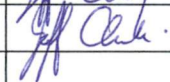

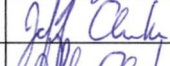

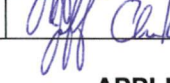
DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82810	Cargo Basket Assembly	0
82811	Basket Body Assembly	0
82812	Basket Lid Assembly	0
82821	Basket Components - Attachment Hoop	0
82827	Basket Components - Placard	0
49210	Basket Components - Hoops	1
49215	Basket Components - Spacer	0
49216	Basket Components - Spacer	0
36255	Handle Assembly	1
36261	Handle Bar Assembly	6
36262	Handle Bracket Assembly	1
36271	Handle Lever	1
36272	Basket Bracket	1
36273	Lid Bracket	1
36274	Bushing	1
36275	Bushing	2
36277	Handle Bar	0
36278	Spring	1
36280, Sheet 1	Brace	2
36280, Sheet 2	Brace	2
ENGINEERING DOCUMENTS		
ER828.01	Engineering Report	0
APPROVAL:	ORIGINAL DATE: 3 December, 2008 REVISION DATE:	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333
	SHEET 1 OF 1	McDonnell Douglas MD600N Quick Release Cargo Basket Assembly
	Rev.	
	DCL828-11	0

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82815	Down Tube Assembly	0
82830	Cargo Hook Pad	0
82831	Strut Assemblies	0
82832	Down Tube Fabrication	0
ENGINEERING DOCUMENTS		
ER828.01	Engineering Report	0
APPROVAL:	ORIGINAL DATE: 3 December, 2008 REVISION DATE:	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333
	SHEET 1 OF 1	McDonnell Douglas MD600N Quick Release Mounting Beams
	DCL828-12	Rev. 0

CONFORMITY INSPECTION RECORD

Applicant	Aeronautical Product				Title of Change
AERO Design Ltd.	Make McDonnell Douglas	Model MD600N	Serial No. N/A	Registration N/A	Quick Release Cargo Basket
Drawing No.	Applicant's Inspector Signature	Date	T.C. Inspection Signature	Date	Findings
Provisions					
82802 (Provisions Installation)		Jan 9/08			
82815 (Beams)		Dec 23/07			
82830 (Hook Pad)		↓			
82831 (Struts)					
Basket					
82801 (Installation)		Jan 9/08			
82810 (Assy)		Dec 23/07			
82811 (Body)		↓			
82812 (Lid)					

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

- ☒ MODIFICATION,
☐ REPAIR,
☐ TSO/AP-TC ARTICLE

is in conformity with the applicable installation drawing(s) listed above and that necessary ground tests have been carried out.
 [Please check (✓) the applicable box.]

Additional Information:

Signature:  BILL Chernoff M420934


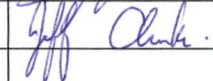
TC INSPECTION

- ☐ ACCEPTABLE
☐ UNACCEPTABLE

Remarks:

Signature: _____

CONFORMITY INSPECTION RECORD

Applicant	Aeronautical Product				Title of Change
AERO Design Ltd.	Make	Model	Serial No.	Registration	Quick Release Cargo Basket STEP
	McDonnell Douglas	MD600N	N/A	N/A	
Drawing No.	Applicant's Inspector Signature	Date	T.C. Inspection Signature	Date	Findings
Step					
82901 (Installation)		Jan 9/08			
82910 (Assembly)		Dec 23/08			

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

- ☒ MODIFICATION,
☐ REPAIR,
☐ TSO/AP-TC ARTICLE

is in conformity with the applicable installation drawing(s) listed above
and that necessary ground tests have been carried out.
[Please check (✓) the applicable box.]

Additional Information:

Signature:  Bill Chernov # m420934

TC INSPECTION

- ☐ ACCEPTABLE
☐ UNACCEPTABLE

Remarks:


Signature: _____

STAFF INSTRUCTION 513-008

Flight Test Division Support of Regional Flight Test Activities

Appendix A – Statement of Suitability for Flight Test

Aircraft Type/Model	McDonnell Douglas MD600N
Registration	C-GOHN
Serial Number	RN024
Description of Design Change(s)	Installation of Aero Design Ltd. Quick Release Cargo Basket; installation of Quick Release Step
Design Drawings	82801, 82802, 82901

Statement of Suitability for Flight Test	
This is to certify that I have reviewed the subject design change and that I have reasonable assurance that compliance could be found with all applicable design requirements, except for those requirements that will be substantiated by flight-testing. I consider the aircraft to be safe for flight.	
<div></div>	
Regional Engineer, Aircraft Certification, or Authorized Person 	Date 07 JAN 2009

Transport
CanadaTransports
Canada

SPECIAL FLIGHT PERMIT

PERMIS DE VOL SPÉCIAL

Name of Air Operator - Nom de l'exploitant aérien Oceanview Helicopters Ltd.		Flight Permit Authorization No. - N° d'autorisation du permis de vol 09-01-08 JO	
Aircraft Manufacturer - Constructeur de l'aéronef McDonnell Douglas	Model - Modèle MD 600N	Serial No. - N° de série RN024	Nationality and Registration Marks Marques de nationalité et d'immatriculation C-GOHN
Aircraft does not meet the applicable airworthiness requirements for the following reasons: Installation of Aero Design Ltd. Quick Release Mounting Provisions, Quick Release Cargo Basket and Quick Release Step, in accordance with Drawing 82801, 82802 and 82901		L'aéronef ne satisfait pas aux exigences de navigabilité en vigueur pour les raisons suivantes :	
A ferry flight is authorized to a base where maintenance can be carried out according to the following itinerary:		Un vol de convoyage est autorisé à une base où des travaux d'entretien peuvent être exécutés, selon le trajet suivant :	
From - De Powell River, BC (YPW)	To - À Local	Date (yyyy-mm-dd / aaaa-mm-jj) 2009/01/08	
Intermediate stops (if any) - Escales intermédiaires, le cas échéant : Flights for testing installation as required, valid to 2009/03/05			
Action to be taken prior to flight - Mesures à prendre avant le vol : The aircraft must be certified as safe for flight. Aircraft must be certified that the Aero Design Installation conforms to the drawings. Conditions in the flight test plan FTP 828.03 are met.			
THIS FLIGHT SHALL BE SUBJECT TO THE FOLLOWING STANDARD OPERATING LIMITATIONS		CE VOL EST SOUMIS AUX CONDITIONS D'EXPLOITATION NORMALISÉES SUIVANTES :	
1. Essential crew members only - No passengers. 2. Permission of foreign civil aviation authority required prior to flight over their territory. 3. Where, by virtue of damage or unserviceability, performance of the aircraft is in any way degraded, air traffic control is to be advised both in the flight plan and on initial contact.		1. Membres d'équipage essentiels seulement - pas de passagers. 2. Obtenir l'autorisation des autorités de l'aviation civile étrangères avant d'effectuer un vol au-dessus de leur territoire. 3. Lorsque, en raison de dommages ou du mauvais état de l'aéronef, le rendement de ce dernier est d'une quelconque façon diminué, il faut en informer les services de contrôle de la circulation aérienne dans le plan de vol et au moment du contact initial.	
4. Flight is limited to VMC <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		4. Le vol est limité à VMC <input type="checkbox"/> Oui <input type="checkbox"/> Non	
FLIGHT SHALL BE OPERATED IN COMPLIANCE WITH THE FOLLOWING SPECIAL OPERATING LIMITATIONS: Flight permitted to 1.1 times VNE. No flight over built up areas. Flight conducted in accordance with the flight test plan FTP 808.03		LE VOL DOIT ÊTRE RÉALISÉ CONFORMÉMENT AUX CONDITIONS D'EXPLOITATION PARTICULIÈRES SUIVANTES :	
PRINT NAME REPLIR EN CARACTÈRES D'IMPRIMERIE	Safe for ferry statement has been entered in the Journey Log by L'attestation que l'aéronef est en état d'effectuer le vol de convoyage a été inscrite dans le carnet de route par ▶		
	Flight under above limitations has been authorized by Le vol en vertu des limites susmentionnées a été autorisé par ▶ John Oystensen		
	Form prepared by (if other than person signing below) Formule établie par (si autre que le soussigné) ▶		
Signature of Authorized Person - Signature de la personne autorisée 		Date (yyyy-mm-dd / aaaa-mm-jj) 2009/01/08	

1 ORIGINAL - FLIGHT LOG
- CARNET DE VOL2 OPERATOR'S RECORD
- DOSSIER DE L'EXPLOITANT3 TRANSPORT CANADA
- TRANSPORTS CANADA

WEIGHT BALANCE FOR SKI BASKET ON C-FOHN

Most Forward C of G Empty Basket/Full Basket

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237761.45	-0.39	-884.25
PILOT	170	43.0	7310	-14.0	-2380
PASS. COCKPIT RH	170	43.0	7310	13.5	2380
PASS. CABIN FWD - FWD FACING LH	170	74.0	12580	-15.0	-2550
PASS. CABIN FWD - FWD FACING C	170	74.0	12580	0	0
PASS. CABIN FWD - FWD FACING RH	170	74.0	12580	15.0	2550
NOMINAL FUEL	782	82.1	64202.2	0	0
BASKET (EMPTY)	56.2	82.8	4653.2	-35.9	-2017.6
TOTAL	3955.5		358,976.85		-2901.85

$$\frac{358,976.85}{3955.5} = 90.8$$

$$\frac{-2901.85}{39.55.5} = -0.73$$

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237761.45	-0.39	-884.25
PILOT	170	43.0	7310	-14.0	-2380
PASS. COCKPIT RH	170	43.0	7310	13.5	2380
PASS. CABIN FWD - FWD FACING LH	170	74.0	12580	-15.0	-2550
PASS. CABIN FWD - FWD FACING C	170	74.0	12580	0	0
PASS. CABIN FWD - FWD FACING RH	170	74.0	12580	15.0	2550
NOMINAL FUEL	726.5	82.1	59645.65	0	0
BASKET	56.2	82.8	4653.36	-35.9	-2017.6
BASKET (FULL)	200	82.1	16420	-39.8	-7960
TOTAL	4100		370,840.46		-10,861.90

$$\frac{370,840.46}{4100} = 90.4$$

$$\frac{-10,861.19}{4100} = -2.6$$

Most Aft C of G Empty Basket/Full Basket

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237,761.45	-0.39	-884.25
PILOT	170	43.0	7310	-14.0	-2380
PASS. AFT LH	170	107.0	18190	-13.0	-2210
PASS. AFT RH	170	107.0	18190	13.0	2210
BAGG. UNDER SEAT	50	105.0	5250	0	0
BASKET EMPTY	56.2	82.8	4653.4	-35.9	-2017.6
TOTAL	2883.5		291,354.85		-5281.85

$$\frac{291,354.85}{2883.5} = 101.0$$

$$\frac{-5281.85}{2883.5} = -1.8$$

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237,761.45	-0.39	-884.25
PILOT	170	43.0	7310	-14.0	-2380
PASS. AFT LH	170	107.0	18190	-13.0	2210
PASS. AFT RH	170	107.0	18190	13.0	2210
BAGG. UNDER SEAT	50	105.0	5250	0	0
BASKET	56.2	82.8	4653.4	-35.9	-2017.6
BASKET FULL	200	82.1	16420	-39.8	-7960
TOTAL	3083.5		307,774.85		-13,241.90

$$\frac{307,774.85}{3083.5} = 99.8$$

$$\frac{-13241.9}{3083.5} = -4.3$$

WEIGHT BALANCE FOR SKI BASKET ON C-FOHN

Full Basket

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237,761.45	-0.39	-884.25
PILOT	140	43.0	6020	-14.0	-1960
PASS. RH	170	43.0	7310	13.5	2295
BALLAST	477.5	100.0	47750	0	0
FUEL	789 (116)	82.1	64776.9	0	0
BASKET	56.2	82.8	4653.36	-35.9	-2017.58
BASKET BALLAST	200	82.1	16420.0	-39.8	-7960
TOTAL	4100		384,691.71		-10526.8

$$\text{Longitude C of G } \frac{384,691.71}{4100} = 93.8$$

$$\text{Lat. of c of G } \frac{-10526.8}{4100} = -2.6$$

WITHIN LIMITS

Step Provisions

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237,761.45	-0.39	-884.25
PILOT	140	43.0	6020	-14.0	-1960
PASS. RH	170	43.0	7310	13.5	2295
BALLAST	722.5	100	72250	0	0
FUEL	789 (116)	82.1	64776.9	0	0
BASKET STEP	11.2	85.6	958.7	-20.5	-229.6
TOTAL	4100		389,077.10		-778.85

$$\text{Longitude C of G } \frac{389077.1}{4100} = 94.9$$

$$\text{Lat. C of G } \frac{-778.85}{4100} = -0.2$$

WITHIN LIMITS

Standard Configuration

		Longitude		Latitude	
EMPTY WEIGHT	2267.3	104.86	237,761.45	-0.39	-884.25
PILOT	140	43.0	6020	-14.0	-1960
PASS. RH	170	43.0	7310	13.5	2295
BALLAST	733.7	100	73,370	0	0
FUEL	789 (116)	82.1	64776.9	0	0
TOTAL	4100		389,238.35		-549.25

$$\text{Longitude C of G } \frac{389238.35}{4100} = 94.9$$

$$\text{Lat. C of G } \frac{-549.25}{4100} = -0.13$$

WITHIN LIMITS

C. FOLN.

Most FWD C of G. (Empty Basket) (Fuel Basket)

LONG.

LAT.

EMPTY WT.	2267.3	10486	237761.45	-39	-884
Pilot.	170	43.0	7310	-140	-238
Pass. Cockpit RH.	170	43.0	7310	13.5	238
Pass Cabin FWD - fwd firing LH	170	74.0	12580	-15.0	-2550
Pass Cabin FWD - fwd firing C	170	74.0	12580	0	0
Pass Cabin FWD - fwd firing RH	170	74.0	12580	15.0	2550
Normal fuel	782	82.1	64202.2	0	0
Basket. (Empty)	56.2	82.8	4653.2	-35.9	-2017.6
TOTAL	3955.5		358,976.85		-2901.3

$$\rightarrow 358,976.85 = 90.8$$

$$-2901.85 = -0.73$$

3955.5

3955.5

LONG.

EMPTY WT.

Pilot	170	43.0	7310	-140	-2380
Pass Cockpit RH.	170	43.0	7310	13.5	2380
Pass Cabin FWD - fwd fire LH	170	74.0	12580	-15.0	-2550
Pass Cabin FWD - fwd fire C	170	74.0	12580	0	0
Pass Cabin FWD - fwd fire RH	170	74.0	12580	15.0	2550
Normal fuel	726.5	82.1	29,645.55	0	0
Basket. ()	56.2	82.8	4653.36	-35.9	-2017.6
Basket. (fuel)	200	82.1	16420	-39.8	-7960
	4100		370,840.46		-10845

$$370,840.46 = 90.4$$

$$-10,861.19 = -2.6$$

4100

4100

C. FOHN

MOST AFT COF G EMPTY BASKET / FULL BASKET

EMPTY WT.	2267.3	104.86	237761.45	-0.39	-884.25
PILOT	170	43.0	7310	-14.0	-2380
PASS AFT LH	170	107.0	18190	-13.0	-2210
PASS AFT RH	170	107.0	18190	13.0	2210
BAGG. UNDER SEAT.	50	105.0	5250	0	0
BASKET EMPTY.	56.2	82.8	4653.4	-35.9	-2017.6
	2883.5		291,354.85		-5281.85

$$\frac{291,354.85}{2883.5} = 101.0$$

$$\frac{-5281.85}{2883.5} = -1.8$$

EMPTY WT.	2267.3	104.86	237761.45	-0.39	-884.25
PILOT	170	43.0	7310	-14	-2380
PASS AFT LH	170	107.0	18190	-13	2210
PASS AFT RH	170	107.0	18190	13	2210
BAGG. UNDER SEAT	50	105.0	5250	0	0
BASKET.	56.2	82.8	4653.4	-35.9	-2017.6
BASKET FULL	200	82.1	18420	-39.8	-7760
	3083.5		307774.85		-13241.9

$$\frac{307,774.85}{3083.5} = 99.8$$

$$\frac{-13241.9}{3083.5} = -4.3$$

NOTICE

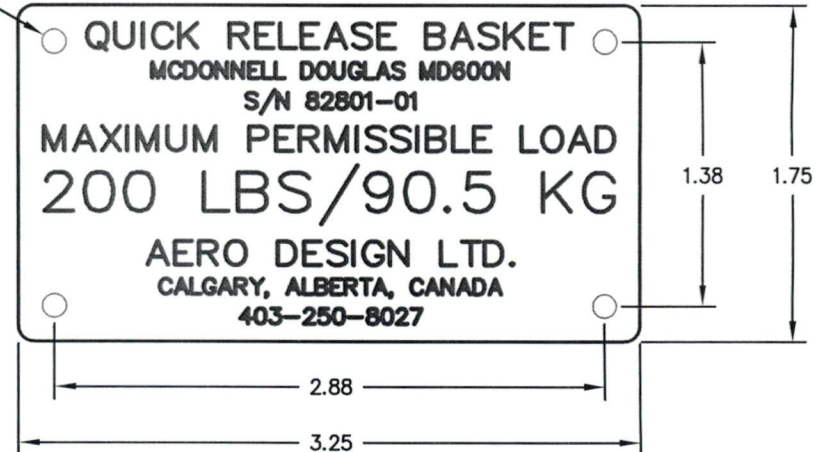
THIS DRAWING CONTAINS INFORMATION AND DATA WHICH IS PROPRIETARY TO AERO DESIGN LTD. THIS DRAWING, OR ANY PORTION THEREOF, MAY NOT BE REPRODUCED, COPIED, OR DUPLICATED IN ANY MANNER, NOR USED FOR MANUFACTURING WITHOUT THE WRITTEN CONSENT OF AERO DESIGN LTD. BY ACCEPTING THIS DRAWING FOR REFERENCE, THE RECIPIENT AGREES TO HOLD AERO DESIGN LTD. HARMLESS FROM THE USE, OR MISUSE, OF THIS DRAWING OR THE INFORMATION CONTAINED THEREON.

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1			

NOTES

- ENGRAVE 0.007 DEEP AS FOLLOWS:
 "QUICK RELEASE BASKET" - 0.125 HIGH
 "MCDONNELL DOUGLAS MD600N" - 0.080 HIGH
 "S/N 82801-XX" - 0.080 HIGH
 "MAXIMUM PERMISSIBLE LOAD" - 0.125 HIGH
 "200 LBS/90.5 KG" - 0.200 HIGH
 "AERO DESIGN LTD." - 0.125 HIGH
 "CALGARY, ALBERTA, CANADA" - 0.080 HIGH
 "403-250-8027" - 0.080 HIGH

DRILL #30 (0.129)
4 PLACES



01 PLACARD

82827-01		01	PLACARD	6061-T6 ALUMINUM		QQ-A-250/11		0.063 SHEET			
PART NO.		ITEM	DESCRIPTION	MATERIAL		MATERIAL SPEC		STOCK SIZE			
LIST OF MATERIALS											
	APPROVALS		DATE		<div>AERO DESIGN LTD.</div> <div>CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M</div> <div>2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7</div> <div>tel: (403) 250-8027 fax: (403) 250-8333 aerodesign@telusplanet.net</div>						
	DRAWN: JEFF CLARKE		27 NOV 2008								
	CHECKED: E. BURGOIN										
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: <div>DECIMALS ANGLES</div> <div>X.XXX ±0.010 ±1/2°</div> <div>X.XX ±0.03</div> <div>X.X ±0.1</div>				MCDONNELL DOUGLAS MD600N QUICK RELEASE CARGO BASKET PLACARD						
				SCALE 1 : 1		DWG. SIZE		DWG. NO.		REV.	
				SHEET 1 OF 1		A4		82827		0	

MCDONNELL DOUGLAS MD600N

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the **INSTALLATION of the AERO DESIGN** **QUICK RELEASE CARGO BASKET** **AND/OR QUICK RELEASE STEP**

Supplemental Type Certificate No. SH0X-XX

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the McDonnell Douglas MD600N when fitted with the Quick Release Cargo Basket or Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Table of Contents

I	Limitations	3
II	Normal Procedures	3
III	Emergency Procedures	3
IV	Performance	3
V	Weight and Balance	4
VI	Installation / removal instructions	6

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	27 Nov 2008	Original Issue		

I LIMITATIONS

1. The maximum load in the AERO Design Ltd. Quick Release Cargo Basket is 200 lb. (90.5 kg).
2. Only one basket may be installed on the helicopter, on the right or left side.
3. Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
4. V_{NE} is unchanged from the basic rotorcraft.
5. Quick Release Step may be installed on the right and/or left side. Installation on both sides is approved. Step may be installed on the inboard side of the beams (stowed position) when the basket is installed.
6. Flight operations using the cargo hook are prohibited while there is cargo loaded in the Cargo Basket.

II NORMAL PROCEDURES

1. Pre-flight inspections:
 - a) Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - c) Ensure the basket is locked in position on the beams. Pull up on the forward and aft end of the basket to check.
 - d) Ensure the step is locked in position on the beams. Pull up on the forward and aft end of the step to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

1. Cruise performance and range will be reduced by approximately XX percent with the Cargo Basket installed.
2. Climb performance will be reduced by up to XX fpm with the Cargo Basket installed.

V WEIGHT AND BALANCE

1. The following weight and balance is for the Quick Release Cargo Basket configuration, installed in accordance with drawing 82801.

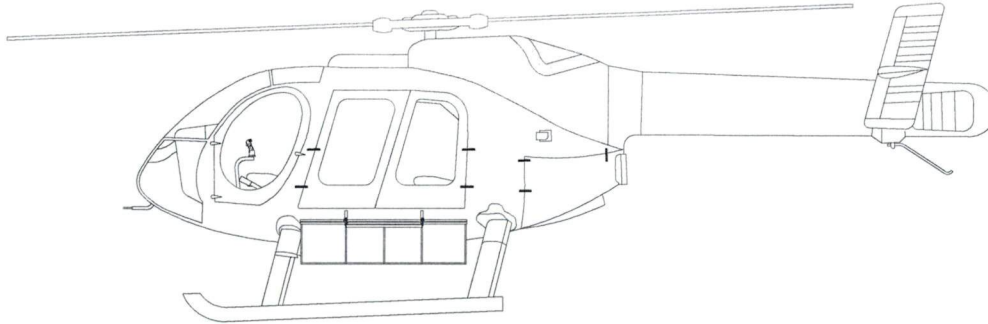


Figure 1 – Quick Release Cargo Basket Configuration

Quick Release Cargo Basket Configuration

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basket Only ¹	45.0 lb	82.1 in	3 694.5 in*lb	+/- 39.8 in	+/- 1 788.8 in*lb
	20.4 kg	2085 mm	42 534 mm*kg	+/- 1011 mm	+/- 20 624 mm*kg
Cargo ² (MAX)	200 lb	82.1 in	16 420 in*lb	+/- 39.8 in	+/- 7 960 in*lb
	90.5 kg	2085 mm	411 991 mm*kg	+/- 1011 mm	+/- 91 496 mm*kg

¹ Weight and balance is for Cargo Basket only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

² Longitudinal and Lateral moment arms are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

2. The following weight and balance is for the quick release step configuration, installed in accordance with drawing 82901.

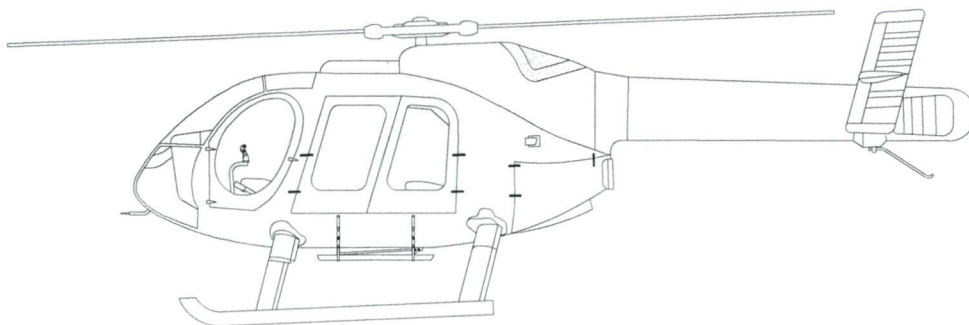


Figure 2 – Quick Release Step Configuration

Quick Release Step Configuration – Outboard Position

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Step Only ¹	5.0 lb	82.1 in	410.5 in*lb	+/- 29.5 in	+/- 147.5 in*lb
	2.3 kg	2085 mm	4 796 mm*kg	+/- 749 mm	+/- 1 723 mm*kg

Quick Release Step Configuration – Inboard Position (Stowed)

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Step Only ¹	5.0 lb	82.1 in	410.5 in*lb	+/- 23.7 in	+/- 118.5 in*lb
	2.3 kg	2085 mm	4 796 mm*kg	+/- 602 mm	+/- 1 385 mm*kg

¹ Weight and balance is for Step only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

VI INSTALLATION / REMOVAL INSTRUCTIONS

The Quick Release Mounting Beams are installed in accordance with drawing 82802. The Quick Release Basket is installed in accordance with drawing 82801. The Quick Release Step is installed in accordance with drawing 82901. Removal of the basket or step leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket or step and which weight and balance amendment is in effect is required.

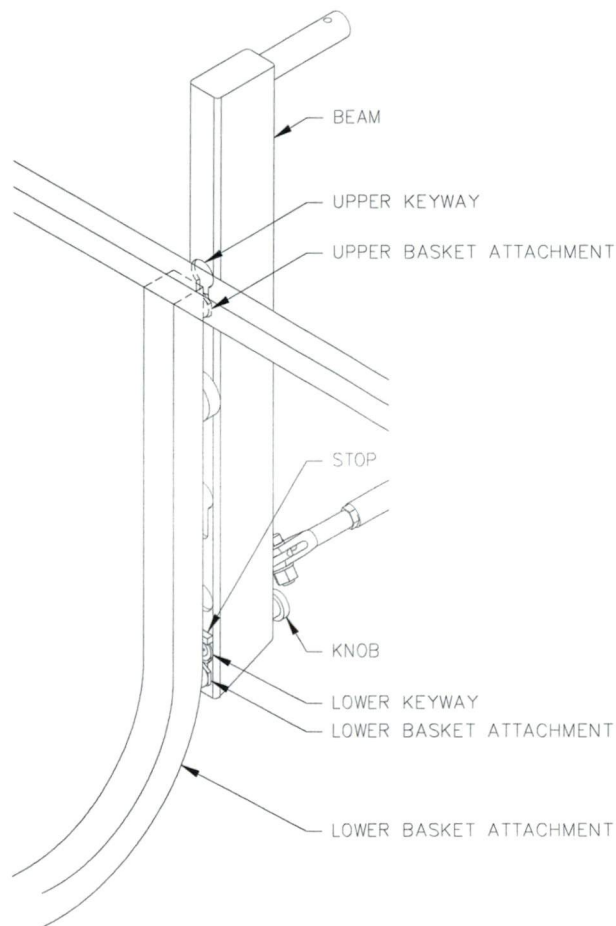


Figure 3 – Basket Attachment

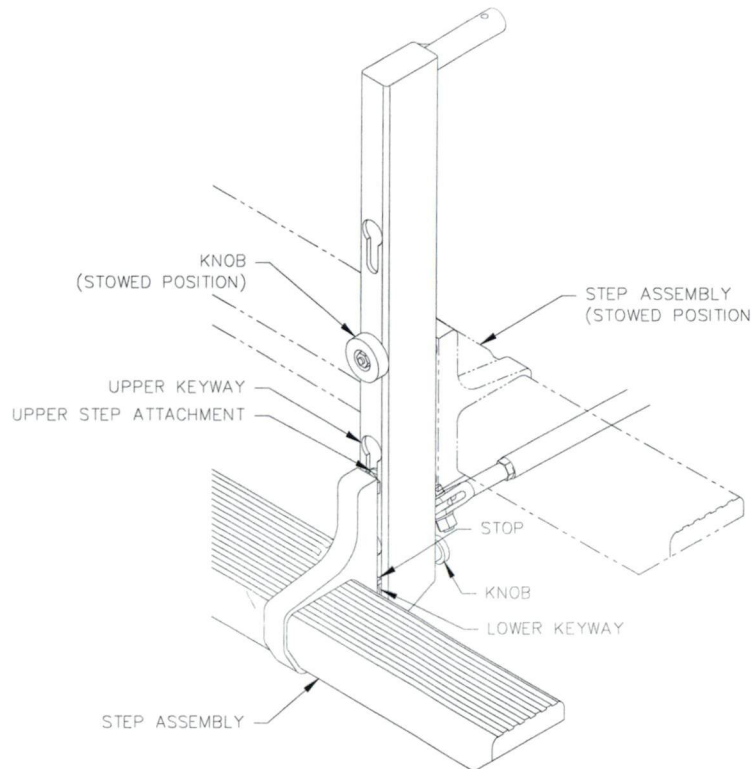


Figure 4 – Step Attachment

Installation and removal instructions are the same for the Quick Release Basket and Quick Release Step Assembly.


1. Installation - Refer to Figure 3/4.
 1. Set upper attachment into upper keyway on forward and aft beams.
 2. At forward end, lift basket or step until lower attachment fitting hits stop over keyway. Push fitting into keyway and slide down until locked. Repeat for aft end.
2. Removal - Refer to Figure 3/4.
 1. Pull knob at bottom end of forward beam and lift basket or step until lower attachment fitting is free of keyway. Keep upper attachment in keyway in beam. Repeat for aft end.
 2. Lift basket or step until upper attachments are out of keyways in beams and remove from helicopter.

STAFF INSTRUCTION 513-008

Flight Test Division Support of Regional Flight Test Activities

Appendix A – Statement of Suitability for Flight Test

Aircraft Type/Model	McDonnell Douglas MD600N
Registration	C-GOHN
Serial Number	RN024
Description of Design Change(s)	Installation of Aero Design Ltd. Quick Release Cargo Basket; installation of Quick Release Step
Design Drawings	82801, 82802, 82901

Statement of Suitability for Flight Test	
This is to certify that I have reviewed the subject design change and that I have reasonable assurance that compliance could be found with all applicable design requirements, except for those requirements that will be substantiated by flight-testing. I consider the aircraft to be safe for flight.	
Regional Engineer, Aircraft Certification, or Authorized Person 	Date 07 JAN 2009

C. F. OHN

Host Apt Coe G Empty Basket / Full Basket

Empty Wt.	2267.3	104.86	237761.45	-0.39	-884.25
Pivot	170	43.0	7310	-14.0	-2380
Pass Apt LH	170	107.0	18190	-13.0	-2210
Pass Apt RH	170	107.0	18190	13.0	2210
Backg. Under Seat.	SD	105.0	\$2520	0	0
Basket Empty.	36.2	82.8	453.4	-35.9	-2017.6
	2883.5		291,354.85		-5281.85

291,354.85 = 101.0 - 5281.85 = -1.8
2883.5 2883.5

Empty Wt.	2267.3	104.86	237761.45	-.39	-884.25
Pivot	170	43.0	7310	-14	-2380
Pass Apt LH	170	107.0	18190	-13	2210
Pass Apt RH	170	107.0	18190	13	2210
Backg. Under Seat	50	105.0	5250	0	0
Basket.	36.2	82.8	453.4	-35.9	-2017.6
Basket Full	200	82.1	16420	-39.8	-7960
	3083.5		307774.85		-13241.9

307,774.85 = 99.8 - 13241.9 = -4.3
3083.5 3083.5

C. Fohn.

Host Fund C of G. (Empty Basket) / (Full Basket)

EMPTY WT.	2267.3	104.86	237761.45	-39	-884.25	LAT.
Pilot.	170	43.0	7310	-140	-2380	
Pass. Cockpit RH.	170	43.0	7310	13.5	2380	
Pass Cabin Fwd - fwd facing LH	170	74.0	12580	-150	-2550	
Pass Cabin Fwd - fwd facing C	170	74.0	12580	0	0	
Pass Cabin Fwd - fwd facing RH	170	74.0	12580	15.0	2550	
Normal fuel	782	82.1	64202.2	0	0	
Basket. (Empty)	56.2	82.8	4653.2	-359	-2017.6	
TOTAL	3955.5		358,976.85		-2901.2	

$$\rightarrow 358,976.85 = 90.8 \times 3955.5$$

$$-2901.85 = -0.73 \times 3955.5$$

EMPTY WT.	2267.3	104.86	237761.45	-39	-884.25	LAT.
Pilot	170	43.0	7310	-140	-2380	
Pass Cockpit RH.	170	43.0	7310	13.5	2380	
Pass Cabin Fwd - fwd LH	170	74.0	12580	-150	-2550	
Pass Cabin Fwd - fwd C	170	74.0	12580	0	0	
Pass Cabin Fwd - fwd RH	170	74.0	12580	15.0	2550	
Normal fuel	726.5	82.1	59,695.55	0	0	
Basket. ()	56.2	82.8	4653.2	-359	-2017.6	
Basket. (full)	200	82.1	16420	-39.8	-7960	
	4100		370,840.46		-10861.5	

$$370,840.46 = 90.4 \times 4100$$

$$-10,861.19 = -2.6 \times 4100$$



APPLICATION FOR A
FLIGHT PERMIT

DEMANDE DE
PERMIS DE VOL

INSTRUCTIONS

Print or type all entries. Reference *Canadian Aviation Regulations Standard 507* for the use and disposition of the form.

Dactylographier ou écrire en lettres moulées. Consultez Règlement de l'aviation canadien norme 507 du Manuel de navigabilité qui précise la façon de remplir et d'acheminer le présent formulaire.

A. AIRCRAFT IDENTIFICATION - IDENTIFICATION DE L'AÉRONEF		
1. Owner - Propriétaire Oceanview Helicopters Ltd.	3. Aircraft Manufacturer - Constructeur de l'aéronef McDonnell Douglas	4a. Model - Modèle MD600N
2. Address - Adresse 2490 Duncan Street Powell River, BC V8A 1W7	4b. Maximum Permissible Take-Off Weight Masse maximale admissible au décollage ▶ 1859.73 Kg _____ lb	
	5. Serial Number - Numéro de série RN024	6. Nationality and Registration Marks Marques de nationalité et d'immatriculation C-GOHN
B. PURPOSE OF FLIGHT PERMIT (Check applicable boxes) - OBJECTIF DU PERMIS DE VOL (Cocher la ou les case(s) voulue(s))		
<p>1. <input type="checkbox"/> Ferry flights to a base for repairs or maintenance Un vol de convoyage vers une base en vue de réparation ou de maintenance</p> <p>2. <input type="checkbox"/> Delivery, demonstration, market survey, or crew training flights Un vol de livraison, de démonstration, d'étude de marché ou d'entraînement d'équipage</p> <p>3. <input checked="" type="checkbox"/> Flights for the purpose of showing compliance with airworthiness standards Un vol de démonstration de conformité aux normes de navigabilité</p> <p>4. <input type="checkbox"/> Other purpose (Specify) Autre fin (Préciser)</p>		
C. FLIGHT DESCRIPTION AND AIRCRAFT LIMITATIONS		
Description of Flight(s) Use attachment when appropriate		DESCRIPTION DU VOL ET LIMITATIONS DE L'AÉRONEF Description du ou des vol(s) Joindre une feuille au besoin
1. From - Aérodrome de départ Powell River, BC (YPW)	2. To - Aérodrome de destination Powell River, BC (YPW)	
3. Via - Escales	4. Effective date (yyyy - mm - dd) Date effective (aaaa - mm - jj) 2009-01-05	5. Termination date (aaaa - mm - dd) Date limite (aaaa - mm - jj) 2009-03-05
6. Aircraft does not meet the applicable airworthiness requirements as follows: Raisons pour lesquelles l'aéronef ne satisfait pas aux exigences de navigabilité en vigueur : Installation of AERO Design Ltd. Quick Release Mounting Provisions, Quick Release Cargo Basket and Quick Release Step, in accordance with drawing 82801, 82802, and 82901. Flight to 1.1 Vne required.		
7. The following maintenance conditions are considered necessary for safe operation: Les conditions d'entretien suivantes sont nécessaires pour la conduite des vols en toute sécurité : Log book entry stating the helicopter is safe and fit for flight by a qualified AME		
8. The following operating conditions are considered necessary for safe operation: Les conditions d'exploitation suivantes sont nécessaires pour la conduite des vols en toute sécurité : No flight over built up areas Essential crew only Day VFR conditions		
D. SIGNATURES		
I hereby certify that the aircraft described above is in a condition for safe operation. Je, soussigné, certifie que l'aéronef décrit ci-dessus est en bon état de vol.		
_____ Signature, AME Licence No., ACA No. or RCA No. Signature, N° de licence de TEA, N° d'autorisation ou N° d'autorisation restreinte and - et		_____ Date (yyyy - mm - dd) Date (aaaa - mm - jj)
_____ Signature of the Registered Owner or Authorized Representative Signature du propriétaire enregistré ou du représentant autorisé		_____ Date (yyyy - mm - dd) Date (aaaa - mm - jj)

AMDT 27-26

RGL Home

Federal Aviation Regulation

This Section of FAR is No Longer Current.
Click "Here" to go to FAR database and search for current section.

▼ Sec. 27.865

Part 27 AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT	
Subpart D--Design and Construction	External Load Attaching Means

Sec. 27.865

External load attaching means.

[(a) It must be shown by analysis or test, or both, that the rotorcraft external load attaching means can withstand a limit static load equal to 2.5, or some lower factor approved under Secs. 27.337 through 27.341, multiplied by the maximum external load for which authorization is requested. The load is applied in the vertical direction and in any direction making an angle of 30° with the vertical, except for those directions having a forward component. However, the 30° angle may be reduced to a lesser angle if--]

- (1) An operating limitation is established limiting external load operations to such angles for which compliance with this paragraph has been shown; or
- (2) It is shown that the lesser angle can not be exceeded in service.

(b) The external load attaching means for Class B and Class C rotorcraft-load combinations must include a device to enable the pilot to release the external load quickly during flight. This quick-release device, and the means by which it is controlled, must comply with the following:

- (1) A control for the quick-release device must be installed on one of the pilot's primary controls and must be designed and located so that it may be operated by the pilot without hazardously limiting his ability to control the rotorcraft during an emergency situation.
- (2) In addition a manual mechanical control for the quick-release device, readily accessible either to the pilot or to another crewmember, must be provided.
- (3) The quick-release device must function properly with all external loads up to and including the maximum external load for which authorization is requested.
- (c) A placard or marking must be installed next to the external-load attaching means stating the maximum authorized external load as demonstrated under Sec. 27.25 and this section.

[(d) The fatigue evaluation of Sec. 27.571(a) does not apply to this section except for a failure of the cargo attaching means that result in a hazard to the rotorcraft.]

Transport
CanadaTransports
Canada

Canada



Print

Current Information, directly from the Official Canadian Civil Aircraft Register database.

Aircraft Information**Mark:** C-GOHN**Common Name:** McDonnell Douglas **Model Name:** 600N**Serial No:** RN024**Basis for Eligibility for Registration:** Type Certificate - CAR Standard 507.02 (1), 507.03 (3) - H95**Category:** Helicopter**Max take-off weight:** 1859.73 kgs**Engine:** 1, Turbo Shaft**24-bit address:** 110000000110101001100100**Regional Office:** Vancouver**Year Imported:** 2005**Base of Operations:** CANADA , Alberta, Bonnyville**Manufacturer Information****Manufacturer:** McDonnell Douglas Helicopter Sys.**Country of manufacture:** U.S.A.**Year of Manufacture:** 1997**Registration Information****Type of Registration:** Commercial**Owner Registered Since:** 2008-06-12**Latest Certificate of Registration Issued:** 2008-06-12**Last Registered Owner Information****Name:** Oceanview Helicopters Ltd.**Address:** 7490 Duncan St**City:** Powell River**Province/State:** British Columbia**Postal Code:** V8A 1W7**Country:** CANADA**Region:** Pacific**Mail Recipient:** Yes

AIRWORTHINESS NOTICE B043 EDITION 2, dated 28 January 2000

CONFORMITY INSPECTION ASSOCIATED WITH APPLIANCE TYPE CERTIFICATION OR MODIFICATION/REPAIR APPROVAL PROJECTS

(This Airworthiness Notice supersedes AN No. B043 Edition 1, dated 24 April 1998.)

Purpose

The purpose of this notice is to explain the responsibilities of an applicant prior to requesting a conformity inspection associated with the prototype evaluation of a supplemental type certificate (STC), a limited supplemental type certificate (L/STC), a repair design certificate (RDC), a TSO and/or an appliance type certificate (AP-TC) installation. This revision is intended to clarify the qualifications for those persons responsible for the conformity inspections.

Background

In several cases, prototype installations have not been performed in accordance with the applicant's installation drawings nor have the necessary ground tests been conducted, where required, prior to seeking a conformity inspection by Transport Canada (TC). This situation may often result in ineffective use of TC resources.

Conformity Requirements (Prototype Installation)

The need for a conformity inspection by Transport Canada on a prototype installation associated with an STC, L/STC, RDC, AP-TC or TSO design approval project will be determined by the regional engineer responsible for the project, and the applicant will be advised accordingly. Where such a requirement has been identified, the prototype installation is to be verified by the applicant or his designated person for conformity with the applicable installation drawings and, where required, ground tests performed to determine functionality. The above functions are to be carried out prior to the applicant requesting the required conformity inspection by TC representatives.

Confirmation

A written confirmation is to be provided to the responsible regional project engineer using the Conformity Inspection Record form appended to this notice, or an equivalent form acceptable to TC. The completed form is to be signed by an appropriately rated Aircraft Maintenance Engineer (AME) or Approved Maintenance Organization (AMO). TC form 24-0045 (Conformity Certificate - Repair or Modification), which is intended to certify the installation of an approved modification or repair, should not be used as a Conformity Inspection Record. The Conformity Inspection Record should be accompanied by details pertaining to the location of the test article, the proposed modification or repair, and a proposed date for accomplishing the conformity inspection by TC Airworthiness Inspectors.

CONFORMITY INSPECTION RECORD

Applicant	Aeronautical Product				Title of Change
AERO Design Ltd.	Make	Model	Serial No.	Registration	Quick Release Cargo Basket
	McDonnell Douglas	MD600N	N/A	N/A	
Drawing No.	Applicant's Inspector		T.C. Inspection		Findings
	Signature	Date	Signature	Date	
Provisions					
82802 (Provisions Installation)					
82815 (Beams)	<i>Jff Chk.</i>	<i>Dec 23/08</i>			
82830 (Hook Pad)	<i>Jff Chk.</i>	↓			
82831 (Struts)	<i>Jff Chk.</i>	↓			
Basket					
82801 (Installation)					
82810 (Assy)	<i>Jff Chk.</i>	<i>Dec 23/08</i>			
82811 (Body)	<i>Jff Chk.</i>	↓			
82812 (Lid)	<i>Jff Chk.</i>	↓			

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

☒ MODIFICATION,

☐ REPAIR,

☐ TSO/AP-TC ARTICLE

is in conformity with the applicable installation drawing(s) listed above and that necessary ground tests have been carried out.

[Please check (✓) the applicable box.]

Additional Information:

Signature: _____

TC INSPECTION

☐ ACCEPTABLE

☐ UNACCEPTABLE

Remarks:

Signature: _____

CONFORMITY INSPECTION RECORD

Applicant AERO Design Ltd.	Aeronautical Product				Title of Change Quick Release Cargo Basket
	Make McDonnell Douglas	Model MD600N	Serial No. N/A	Registration N/A	
Drawing No.	Applicant's Inspector		T.C. Inspection		Findings
	Signature	Date	Signature	Date	
Step					
82901 (Installation)					
82910 (Assembly)	<i>[Signature]</i>	<i>Dec 23/08</i>			

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

☒ MODIFICATION,

☐ REPAIR,

☐ TSO/AP-TC ARTICLE

is in conformity with the applicable installation drawing(s) listed above
and that necessary ground tests have been carried out.

[Please check (✓) the applicable box.]

Additional Information:

Signature: _____

TC INSPECTION

☐ ACCEPTABLE

☐ UNACCEPTABLE

Remarks:

Signature: _____

Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]

Sent: December 5, 2008 2:59 PM

To: 'Staal, Jack'

Subject: C-08-0969 - MD600N Quick Release Basket

Jack,

Please find attached the drawings and documentation for the MD600N Quick Release Cargo Basket.

Ted has been in contact with Michel regarding flight testing, and I believe we are tentatively arranged for Jan 8-9.

Let me know if you have any questions.

Jeff Clarke

AERO Design Ltd.

05/12/2008

Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]
Sent: December 5, 2008 3:02 PM
To: 'Staal, Jack'
Subject: C-08-0969 - MD600N Quick Release Step

Jack,

Please find attached the drawings and documentation for the MD600N Quick Release Step.

Let me know if you have any questions.

Jeff Clarke

AERO Design Ltd.

05/12/2008

Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]
Sent: December 5, 2008 3:08 PM
To: 'Staal, Jack'
Subject: C-08-0969 - MD600N Quick Release Cargo Basket Mods

Jack,

Please find attached the revised Cargo Basket Modification drawings that apply to the MD600N

Regards,

Jeff Clarke

AERO Design Ltd.

05/12/2008

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 828.90

QUICK RELEASE CARGO BASKET

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Cargo Basket assembled in accordance with AERO Design Ltd. Document Control List DCL828-11, Revision 0, and DCL828-12, Revision 0, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 0
Date: 27 November, 2008

AERO Design Ltd.
Engineering Consultants

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
Phone: (403) 250-8027
Fax: (403) 250-8333
E-Mail: infor@aerodesign.ca

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	27 November 2008		Original Issue

LIST OF EFFECTIVE PAGES

List of Revisions

Revision 0 (Original Issue) 27 November, 2008

List of Effective Pages

<u>Description</u>	<u>Pages</u>	<u>Revision No.</u>
Cover	1	0
Revision Record/List of Effective Pages	2	0
Table of Contents	3	0
00-00-00	4-5	0
04-00-00	6	0
05-00-00	7-9	0
11-00-00	10	0
25-50-00	11-14	0

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Cargo Basket as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Cargo Basket. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

0-5 GENERAL DESCRIPTION

The cargo basket installation is a metal mesh basket installed to the side of the helicopter on beams attached to the jack points under the main cabin door. The quick release mechanism allows for the installation and removal of the basket without tools, allowing a pilot operating in the field without maintenance support to install or remove the basket, leaving the mounting beams in place.

The basket itself is 65" long, 22.5" wide, and 17" high. It is made of a steel welded tubing structure, and lined with expanded steel mesh. The basket has a hinged lid with a self-locking handle.

The beams consist of a steel tube with various keyways for mounting the basket and other equipment such as steps. The quick release mechanism is built into the steel tube. Struts attach the bottom of the beam to a mounting point installed between the cargo hook and fuselage.

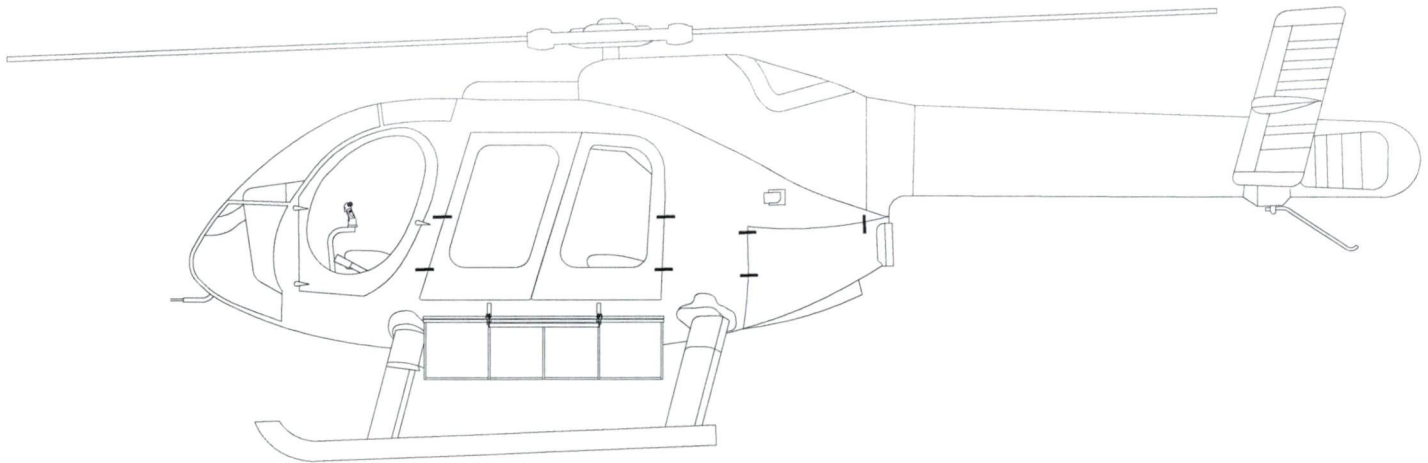


Figure 1 – Cargo Basket Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is Transport Canada approved and specifies maintenance required under Section 571 of the Canadian Aviation Regulations, unless an alternative program has been approved.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Cargo Basket.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Cargo Basket.

Daily Inspection

1. Inspection Area: Basket
 - a) Inspect the basket attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.
 - b) Inspect latching of the lid for correct operation. If basket is bent inward the lid will close but may not latch.

300 Hour or Annual Inspection

1. Inspection Area: Basket
 - a) Visually inspect tube-to-tube welds and mesh-to-tube welds for cracks, corrosion or other damage.
 - b) Visually inspect basket mesh for damage.
2. Inspection Area: Beams

With the basket removed:

 - a) Visually inspect beams attaching basket to the helicopter for cracks, corrosion or other damage.
 - b) Visually inspect the struts attaching the beam to the attachment at the cargo hook for cracks, corrosion or other damage.
 - c) Visually inspect lugs attaching the basket to the beams for security and damage.
 - d) Visually inspect all hardware attaching beams to helicopter hard points for condition and security.

Special Inspections

Following a hard landing inspect the Quick Release Cargo Basket installation in accordance with the 300 hour or annual inspection listed above.

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Basket

- a) Repair Basket in accordance with AC43.13-1B, Chapter 4, Section 5, Welding, as required.
- b) Basket is fabricated from the following materials:
 - Lid and Rim: $\frac{3}{4}$ " square steel tube
 - Frames: $\frac{1}{2}$ " square steel tube
 - Mesh: $\frac{3}{4}$ " 16 ga. (0.040") expanded steel mesh
- c) Touch up with polyurethane paint as required following repairs.

2. Steel Beams

DO NOT REPAIR DAMAGE TO BEAMS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the outboard face up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour.
- b) Nicks and/or gouges on the side and inboard faces up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour.
- c) Critical keyway dimensions are shown in Figure 3. Attempt to insert 27/64 drill shank into bottom end of keyway. If drill can be inserted, slot is worn beyond limit.



Figure 3 – Keyway dimensions

- d) Touch up with polyurethane paint as required following repairs.

3. Struts

DO NOT REPAIR DAMAGE TO STRUTS IF BEYOND THE LIMITS BELOW.

- a) Surface corrosion not exceeding 0.5 square inches and 0.010" deep may be dressed out to a smooth contour.
- b) Dents or bends are not acceptable in any area of the strut.
- c) Touch up with polyurethane paint as required following repairs.

5-3 PROTECTIVE TREATMENT INFORMATION

1. Beams / Struts

The beams and struts are supplied powder coated white. If the powder coat or paint is damaged, touch up with white polyurethane paint.

2. Cargo Basket

The cargo basket is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

CHAPTER 11 – MARKINGS AND PLACARDS

The following markings and placards are used with the Quick Release Cargo Basket Installation in the locations noted:

- a) Located on basket lid:



CHAPTER 25 – EQUIPMENT AND FURNISHINGS

SECTION 50 – CARGO COMPARTMENTS

The Provisions Installation may be installed on the left or right side. The Quick Release Cargo Basket Installation may be applied to the left or right side of the helicopter, depending on the provisions installation.

25-1 PROVISIONS INSTALLATION

Refer to Figure 4.

1. Remove step or jack fitting from jack points at FS 67.3 (PFS 18.76) and FS 96.9 if installed.
2. Insert pin at top of 82815-01 Beam Assembly into jack fitting. Secure beam with existing ball lock pin LW1325-1 through floor. Repeat at other jack fitting.
3. Remove cargo hook by removing four bolts into bottom of fuselage if installed.
4. Install 82830-01 Cargo Hook Pad on bottom of fuselage at existing cargo hook provision. Use NAS1304-26H bolts and AN960-416 washers if the cargo hook will not be installed. Use NAS1304-29H bolts and AN960-416 washers if the cargo hook is being installed. Do not install washer between cargo hook and Cargo Hook Pad. Lockwire the heads of the bolts using MS20995C20E lockwire. Torque bolts to 50-70 inch-pounds.

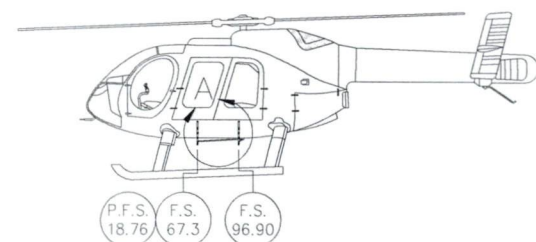
Note: Ensure full engagement of NAS1304 bolt in cargo hook provisions. Bolt length may be increased if required. NAS6604 bolt may be used as alternate if required.

5. Locate 81531-01 forward strut from bottom of forward beam to forward eyebolt on cargo hook pad. Rotate AN45 eyebolts on beam and cargo hook pad as required until strut aligns with both eyebolts. Strut length may be adjusted as required by threading end fitting in/out. Lock fitting in place with checknut. Install AN5-7A bolts, AN960-516 washers, and MS21044N5 nuts at both ends of strut. Torque bolts to 100-140 inch-pounds.
6. Repeat step 5. for 81531-02 aft strut.

25-2 PROVISIONS REMOVAL

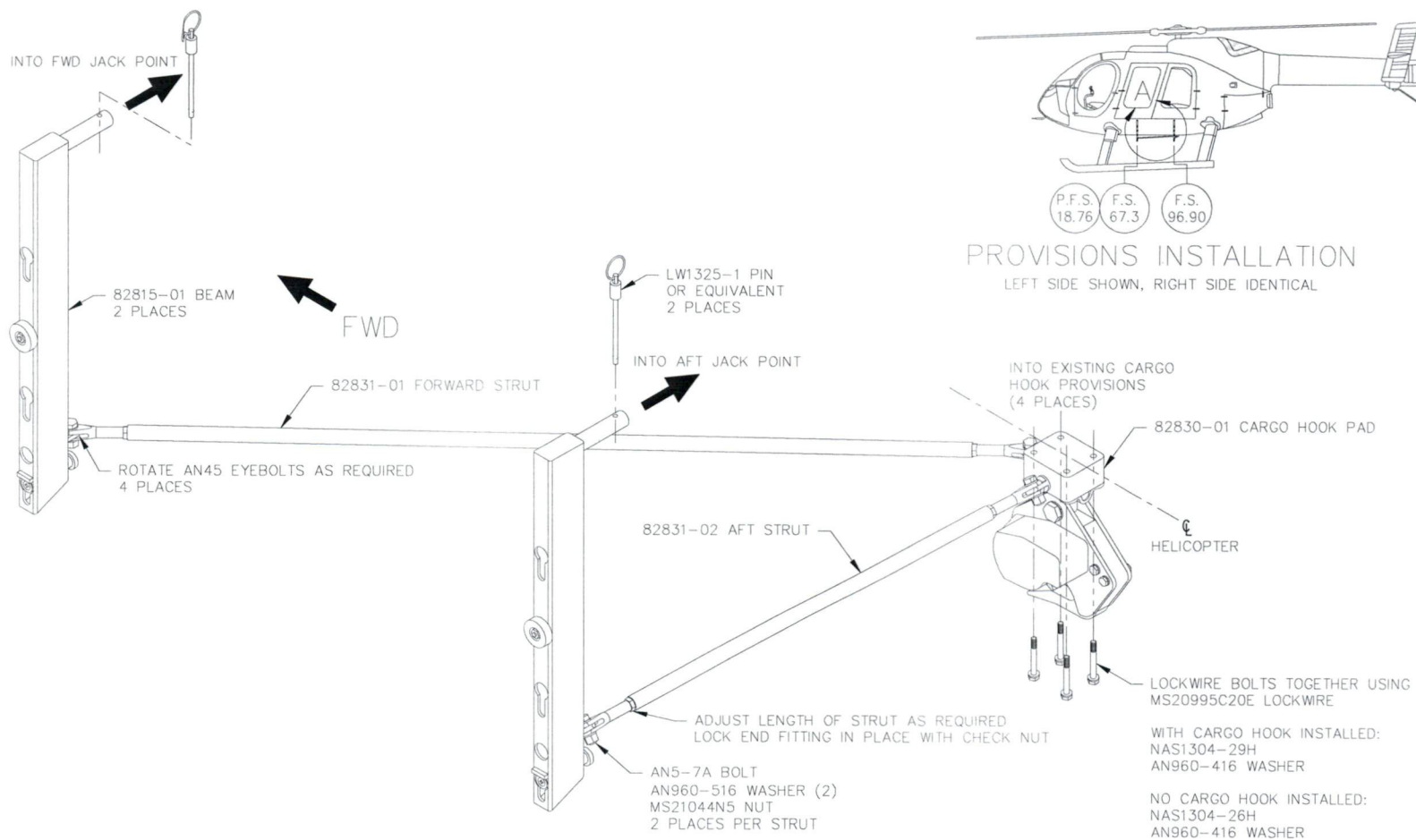
Refer to Figure 4.

1. Remove Cargo Basket. Refer to section 25-4.
2. Remove four AN5-7A Bolts, AN960-516 Washers and MS21044N5 Nuts from 82831-01 Forward Strut and 82831-02 Aft Strut. Remove Struts.
3. Remove two LW1325-1 Pins securing 82815-01 Beam Assemblies. Remove Beam Assemblies.
4. Remove four NAS1304 bolts and AN960-416 washers securing 82830-01 Cargo Hook Pad. Remove Cargo Hook Pad.



PROVISIONS INSTALLATION

LEFT SIDE SHOWN, RIGHT SIDE IDENTICAL



DETAIL A

NOT TO SCALE
LOOKING INBOARD AND FORWARD AT LEFT SIDE
RIGHT SIDE OPPOSITE

Figure 4 – Beam Installation
(Left side shown, right side opposite)

25-3 BASKET INSTALLATION

Refer to Figure 5.

1. Set basket upper attachment into upper keyway in forward and aft beams.
2. At forward end of basket, lift basket until lower attachment fitting hits stop. Push fitting into keyway and slide basket down until locked.
3. Repeat step 2 for aft end.

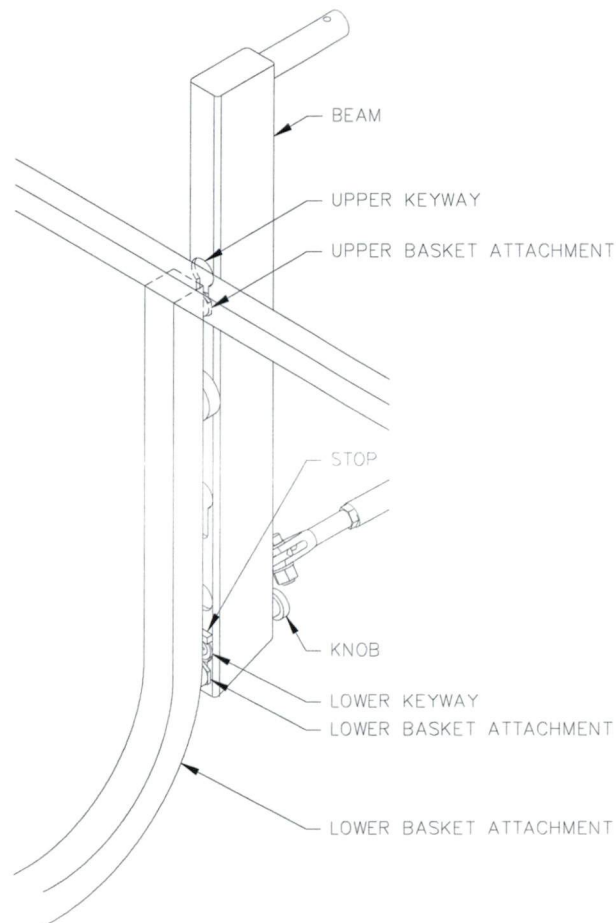


Figure 5 – Basket Attachment

25-4 BASKET REMOVAL

Refer to Figure 5.

1. Pull knob at bottom end of forward beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
2. Pull knob at bottom end of aft beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
3. Lift basket until upper attachments are out of keyways on both beams and remove basket from helicopter.

25-5 WEIGHT AND BALANCE

Two weight and balance configurations are required for the pilot. The first is the installation of Provisions only. The second is Provisions and Cargo Basket as the basket may be removed/installed in the field by the pilot.

Standard

P/N	Description	Weight	Longitudinal		Lateral	
		lb	arm in	moment in-lb	arm in	moment in-lb
82802-01	Provisions Installation	11.2	85.6	958.7	-20.5	-229.6
<i>Provisions and Cargo Basket</i>						
82810-01	Quick Release Cargo Basket	45.0	82.1	3694.5	-39.8	-1788.8
82801-01	Cargo Basket Installation	56.2	82.8	4653.2	-35.9	-2018.4

Metric

P/N	Description	Weight	Longitudinal		Lateral	
		kg	arm mm	moment mm-kg	arm mm	Moment mm-kg
82802-01	Provisions Installation	5.1	2 174	11 087	-521	-2 657
<i>Provisions and Cargo Basket</i>						
82810-01	Quick Release Cargo Basket	20.4	2 085	42 534	-1011	-20 624
82801-01	Cargo Basket Installation	25.5	2 103	53 621	-913	-23 281

Note: Lateral arms are given for left side installation. For installation on right side, lateral arms are positive.

25-6 STRUCTURAL FASTENER DATA

Refer to Maintenance Manual CSP-HMI-2, section 20 for torque values not listed in this ICA.

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	Aero Design Ltd.
Description of the design change:	Installation of Quick Release Provisions and Cargo Basket on McDonnell Douglas MD600N
Certification Basis of design change and revision date:	FAR 27, Amendment 27-30
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	Section 0-3 of Supplemental ICA (ICA 828.90)
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	Installation Drawing 82801, 82802

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: McDonnell Douglas MD600N Maintenance Manual CSP-HMI-2	Supplemental ICA ref: Single Manual (ICA828.90)
A527.2 (b) Practical arrangement (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Arranged in ATA format	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: CSP-HMI-2, Section 01	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: CSP-HMI-2, Section 01	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: CSP-HMI-2, Section 01	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: CSP-HMI-2, Section 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. <i>However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise.</i> The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: CSP-HMI-2, Section 05	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: CSP-HMI-2, Section 25	Supplemental ICA ref: Section 25-1 thru 25-4
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: CSP-HMI-2, Section 07 and 08	Supplemental ICA ref: Section 25-5
A527.3 (c) Access (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: CSP-HMI-2, Section 05	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: CSP-HMI-2, Section 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: CSP-HMI-2, Section 20	Supplemental ICA ref: Section 25-6
A527.3 (g) Special tools (g) A list of special tools needed.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1

The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."

ICA ref: CSP-HMI-2, Section 04

Supplemental ICA ref: Section 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature:  Date: November 27, 2008

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: _____ Phone # _____ Email: _____ Mail Routing Symbol: _____

Signature: _____ Date: _____ NAPA Number _____

AERO Design Ltd.

ENGINEERING REPORT

ER828.01

MCDONNELL DOUGLAS MD600N

QUICK RELEASE CARGO BASKET INSTALLATION

Prepared by: Jeff Clarke, CET

Approved by: E. Burgoin, P.Eng., DAR 290M

Revision 0, 24 November, 2008

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1.0 INTRODUCTION

This installation consists of two configurations. The first is Quick Release Provisions only, which may be used to install other equipment, such as a Cabin Step. The second configuration is the Quick Release Cargo Basket Installation on the Provisions.

The provisions are installed in the existing jack points under the main cabin doors. A pin is inserted into the jack point, and is retained with the existing ball-lock pin (pip-pin). A tube extends down, which incorporates the quick release mechanism, and keyways for various configurations. A strut runs from the bottom of the tube to a mounting point installed between the cargo hook and the bottom of the fuselage.

The Cargo Basket Assembly is similar to other AERO Design Ltd. baskets that are approved. Since the attachments to the helicopter are not at the ends of the basket, larger tubes are used for the intermediate frames, and the attachment are located on these tubes. The basket is rated for maximum cargo load of 200 lbs.

2.0 REFERENCE TEXT

AERO Design Ltd. Drawing 82801, 82802
MIL-HDBK-5

3.0 BASIS OF CERTIFICATION

McDonnell Douglas MD600N – TCDS H-95:

FAR 27, dated October 2, 1964, through Amendment 27-30 with the following deviations: 27.562 and 27.863 excluded (earlier models did not have these requirements); 27.561 at Amendment 27-24; 27.607 at Amendment 27-3; 27.785 at Amendment 27-20; 27.1325 at Amendment 27-12.

Transport Canada Additional Airworthiness Requirements as published in the Canadian Airworthiness Manual, Chapter 527, change 3 dated 1 January 1994: 527.1093(b)(iii); 527.1301-1; 527.1557(c)(3); 527.1581(e); 527.1585(h) Operating Procedures.

This report demonstrates that the installation of the Quick Release Mounting Provisions and Quick Release Cargo Basket comply with the original basis of certification.

4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Quick Release Cargo Basket were reviewed, and none were found to affect this project.

5.0 LOADS

5.1 Load Factors

FAR 27.561(b)(3)

Ultimate Upward Emergency Landing Load Factor:	$n_{e_up} := 1.5$
Ultimate Forward Emergency Landing Load Factor:	$n_{e_fwd} := 4.0$
Ultimate Sideward Emergency Landing Load Factor:	$n_{e_side} := 2.0$
Ultimate Downward Emergency Landing Load Factor:	$n_{e_down} := 4.0$

FAR 27.625

Fitting Factor (does not apply to articles being tested): $n_{ff} := 1.15$

FAR 27.303

Safety Factor: $n_{sf} := 1.5$

FAR 27.337(a)

Limit Positive Maneuvering LoadFactor: $n_{man} := 3.5$

$n_{man_ult} := n_{man} \cdot n_{sf}$

Ultimate Positive Maneuvering LoadFactor: $n_{man_ult} = 5.25$

Limit Negative Maneuvering LoadFactor: $n_{man_n} := -1.0$

$n_{man_neg_u} := n_{man_n} \cdot n_{sf}$

Ultimate Negative Maneuvering LoadFactor: $n_{man_neg_u} = -1.5$

CRITICAL ULTIMATE LOAD FACTORS:

Downward:	Ultimate Positive Maneuvering LoadFactor:	$n_{man_ult} = 5.25$
Forward:	Ultimate Forward Emergency Landing Load Factor:	$n_{e_fwd} = 4.00$
Sideward:	Ultimate Sideward Emergency Landing Load Factor:	$n_{e_side} = 2.00$
Upward:	Ultimate Upward Emergency Landing Load Factor:	$n_{e_up} = 1.50$

Note: The basket is mounted below and to one side of the cabin. Forward deflection or failure in the emergency landing condition does not endanger the occupants. Likewise, Sideward and Upward deflection or failure of the basket in the emergency landing condition do not endanger the occupants.

Sideward and Upward Load Factors are used in the tests to ensure that the lid of the basket does not open in flight.

5.2 Inertia Loads

$$W_{\text{basket}} := 45 \cdot \text{lbf}$$

Weight of basket

$$W_{\text{cargo}} := 200 \cdot \text{lbf}$$

Weight of cargo (max)

$$W_{\text{total}} := W_{\text{basket}} + W_{\text{cargo}}$$

$$W_{\text{total}} = 245 \cdot \text{lbf}$$

Total weight of basket installation (with cargo)

$$P_{\text{lim}} := W_{\text{total}} \cdot n_{\text{man}}$$

$$P_{\text{lim}} = 858 \cdot \text{lbf}$$

Limit maneuvering load due to basket installation

$$P_{\text{ult}} := W_{\text{total}} \cdot n_{\text{man_ult}}$$

$$P_{\text{ult}} = 1286 \cdot \text{lbf}$$

Ultimate maneuvering load due to basket installation

5.3 Drag Load

$$l_{\text{basket}} := 65 \cdot \text{in}$$

Length of basket.

$$w_{\text{basket}} := 22.5 \cdot \text{in}$$

Width of basket.

$$h_{\text{basket}} := 17 \cdot \text{in}$$

Height of basket.

$$A_f := 385 \cdot \text{in}^2$$

Frontal Area of basket.

$$A_p := l_{\text{basket}} \cdot w_{\text{basket}}$$

Planar Area of basket.

$$A_p = 1463 \cdot \text{in}^2$$

$$\frac{l_{\text{basket}}}{w_{\text{basket}}} = 2.9$$

Fineness ratio of basket

$$C_{D0} := 1.6$$

Drag Coefficient of Basket, (overestimated)
(Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

$$\rho := 0.002378 \frac{\text{slug}}{\text{ft}^3}$$

Density of air at Sea Level.

$$V_{ne} := 155 \cdot \text{knots}$$

Never-Exceed-Speed of MD600N
(Ref. Flight Manual.)

$$V_d := \frac{V_{ne}}{0.9}$$

Design Dive Speed of MD600N

$$V_d = 172 \cdot \text{knots}$$

$$\text{Drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{D0}$$

$$\text{Drag} = 430 \cdot \text{lbf}$$

Limit drag on basket.

$$p_{\text{drag_test}} := \text{Drag} \cdot n_{sf}$$

$$p_{\text{drag_test}} = 645 \cdot \text{lbf}$$

Ultimate Drag load on basket in Static Test.

6.0 STRUCTURAL SUBSTANTIATION

6.1 Combined Maneuvering and Drag Load

The structural strength of the Quick Release Provisions and Cargo Basket Installation are demonstrated by test.

A jig was fabricated to simulate the actual helicopter mounting points. The Provisions were mounted on the jig and the basket installed on the provisions. Bags of lead shot are loaded in the basket to apply the maneuvering load, and the basket is pulled aft with a chain connected to a come-along and load cell to apply the drag load.

Limit Load

The basket was loaded with 900 lbs of lead shot (858 lbs required), and pulled aft 460 lbs (430 lbs. required).

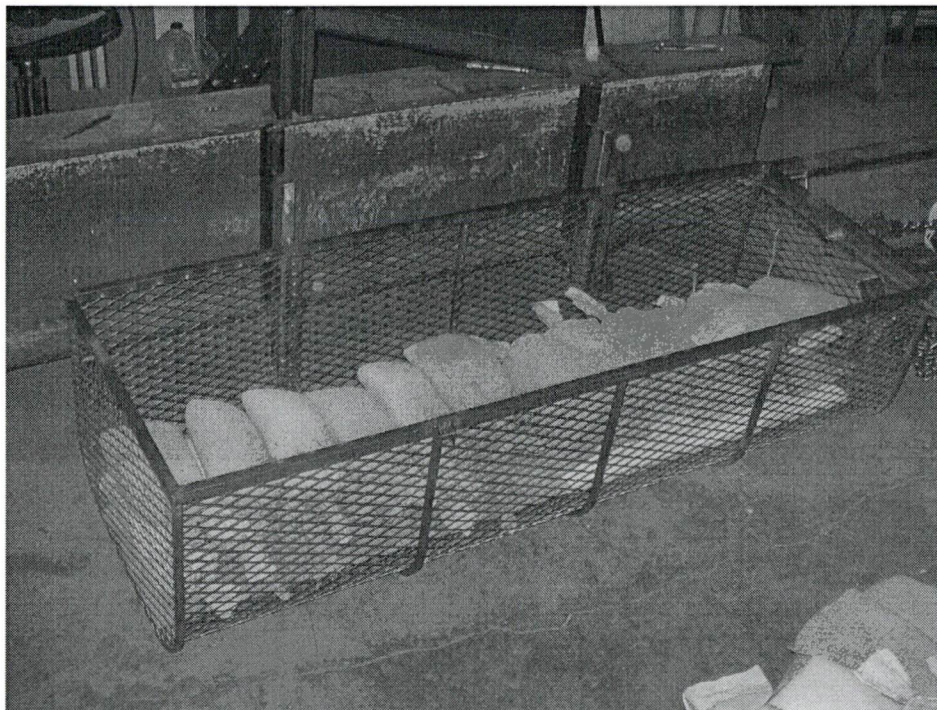


Figure 6.1.1 – Combined Limit Maneuvering and Drag Load

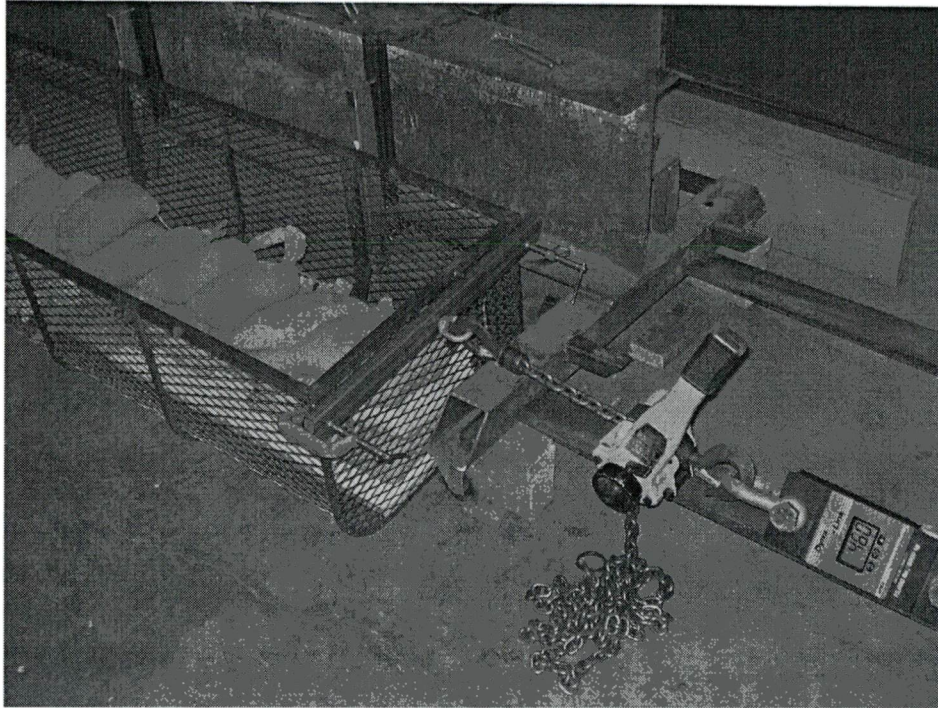


Figure 6.1.2 – Combined Limit Maneuvering and Drag Load

The load was removed and the basket and provisions checked for permanent deformation. The basket and provisions carried the limit load without permanent deformation.

Ultimate Load

The basket was then loaded with 1300 lbs (1286 required), and pulled aft 700 lbs (645 required).



Figure 6.1.3 – Combined Ultimate Maneuvering and Drag Load

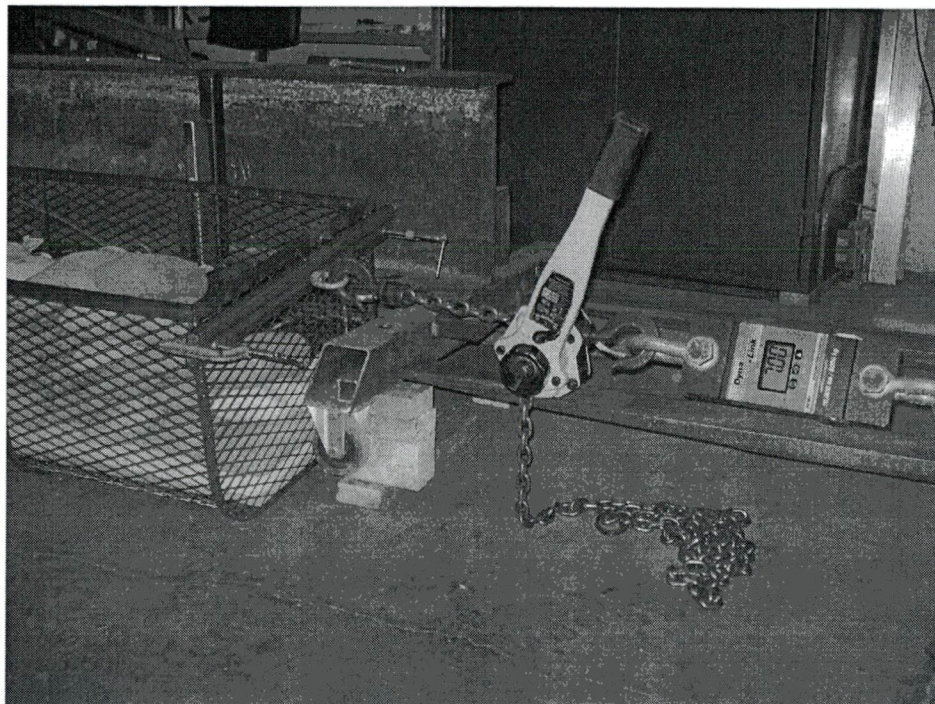


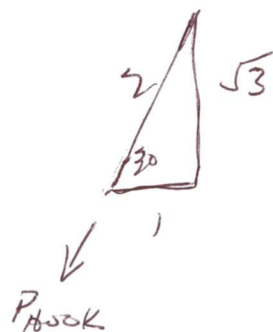
Figure 6.1.4 – Combined Maneuvering and Drag Load

There was no failure of the basket or provisions with the ultimate maneuvering and drag loads applied. The load was removed and the basket and provisions checked for permanent deformation. There was no permanent deformation found. The Cargo Basket and Provisions are acceptable for installation.

Helicopter Mounting Points

The Quick Release Provisions are installed in the existing jack points located under the main cabin doors of the helicopter, and struts are installed from the bottom of the beam to the cargo hook attachment. The loads on the mounting points are as follows.

$$\frac{1}{2} P_{\text{hook}} \times 2.5 \times 1.5$$



$$P_{ult} = 1286 \text{ lbf}$$

Ultimate maneuvering load

$$P_{beam} := \frac{P_{ult}}{2}$$

$$P_{beam} = 643 \text{ lbf}$$

Ultimate load applied to each beam

$$R_{Ay} := P_{beam}$$

Vertical Reaction carried by top attachment only

$$R_{Ax} := \frac{(P_{beam} \cdot 14 \text{ in})}{14.375 \text{ in}}$$

$$R_{Ax} = 626 \text{ lbf}$$

Horizontal Reaction at top attachment

$$R_{Bx} := R_{Ax}$$

Horizontal Reaction at bottom attachment

The struts connecting the bottom of the beams to the cargo hook are compression members.

$$R_C := \frac{R_{Bx}}{\sin(40^\circ)}$$

$$R_C = 974.4 \text{ lbf}$$

Compression in forward strut

$$R_D := \frac{R_{Bx}}{\sin(84^\circ)}$$

$$R_D = 629.8 \text{ lbf}$$

Compression in aft strut

The combined load is the applied horizontal load on the cargo hook attachment.

$$R_{Ey} := R_{Bx} \cdot 2$$

$$R_{Ey} = 1252.7 \text{ lbf}$$

Lateral component of reaction at hook attachment

$$R_{Ex} := R_C \cdot \cos(40^\circ) + R_D \cdot \cos(84^\circ)$$

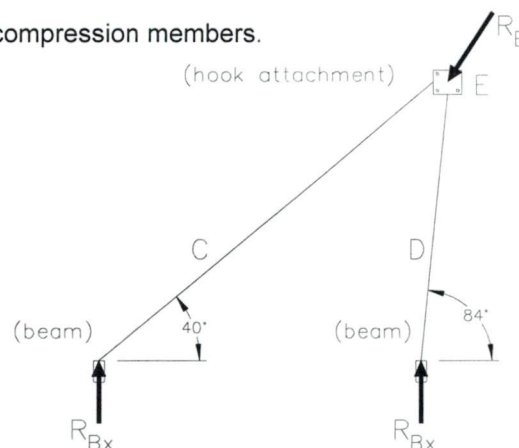
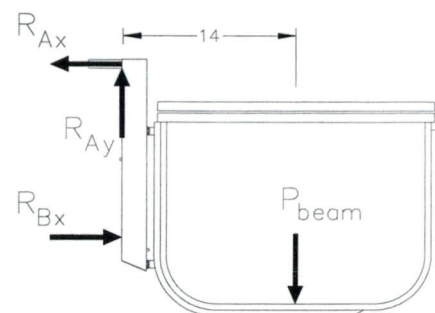
$$R_{Ex} = 812.3 \text{ lbf}$$

Longitudinal component of reaction at hook attachment

$$R_E := \sqrt{R_{Ey}^2 + R_{Ex}^2}$$

$$R_E = 1493 \text{ lbf}$$

Total horizontal load at hook attachment



Jack Points

The jack points must be capable of supporting the weight of the helicopter without deformation. One pair of jack points (fore/aft) is used at a time depending on C of G, and must be able to support the entire weight of the helicopter. Therefore each jack point must be capable of supporting half the weight of the helicopter. The maintenance manual states in the Lifting and Jacking Section that the complete helicopter weighs 2100 lbs, so each jack point must be able to support 1050 lbs at a minimum.

The vertical load from the cargo basket is divided over 2 attachments. The ultimate vertical load applied by the basket (1286 lbs / 2 = 643 lbs) does not exceed the jack point limit load. The jack point attachment is sufficient.

The horizontal load ($R_{Ax} = 626$ lbs) is carried by a 3/16" ball lock pin (P/N LW1325-1) in double shear. This pin is rated for 5150 lbs min. in double shear. The applied load does not exceed the rating of the pin.

Cargo Hook Attachment

$P_{\text{hook}} := 3000\text{ lbf}$	Maximum Cargo Hook Load
$n_{\text{hook}} := 2.5$	Limit Load Factor (Ref: FAR 27.865)
$P_{\text{hook_lim}} := P_{\text{hook}} \cdot n_{\text{hook}}$	
$P_{\text{hook_lim}} = 7500\text{ lbf}$	Limit vertical load on cargo hook attachment
$P_{\text{hook_ult}} := P_{\text{hook_lim}} \cdot n_{\text{sf}}$	
$P_{\text{hook_ult}} = 11250\text{ lbf}$	Ultimate vertical load on cargo hook attachment

Load may be applied up to 30 degrees from vertical (ref: FAR 27.865). The horizontal loads from the hook are used as the allowable load for the quick release provisions.

$P_{x_lim} := P_{\text{hook_lim}} \cdot \sin(30\text{-deg})$	
$P_{x_lim} = 3750\text{ lbf}$	Limit horizontal load applied by hook @ 30 deg.
$P_{x_ult} := P_{\text{hook_ult}} \cdot \sin(30\text{-deg})$	
$P_{x_ult} = 5625\text{ lbf}$	Ultimate horizontal load applied by hook @ 30 deg.

The horizontal load is applied in any direction except those having a forward component.

The load applied to the cargo hook attachment does not exceed the maximum allowable cargo hook load at 30 degrees from vertical. The cargo hook attachment is sufficient.

6.2 Emergency Landing Loads

The lid must remain closed when the upward emergency landing load is applied. This has been demonstrated for 300 lbs of cargo in TR751.02.

The handle must remain latched when the sideward emergency landing load is applied. This has been demonstrated in TR362.02.

7.0 COMPLIANCE WITH FAR 27.1387 AND FAR 27.1401

The position lights are located on the outboard sides of the vertical stabilizers on each side of the tailboom. A red strobe light (anti-collision) is located in the centre of the horizontal stabilizer at the aft end of the tail boom. This installation does not block any of these lights.

Quick Release Cargo Basket

$$W_{\text{basket}} := 45 \cdot \text{lbf}$$

Weight of basket

$$W_{\text{cargo}} := 300 \cdot \text{lbf}$$

Weight of cargo (max)

$$W_{\text{total}} := W_{\text{basket}} + W_{\text{cargo}}$$

$$W_{\text{total}} = 345 \text{ lbf}$$

Total weight of basket installation (with cargo)

$$P_{\text{lim}} := W_{\text{total}} \cdot n_{\text{man}}$$

$$P_{\text{lim}} = 1208 \text{ lbf}$$

Limit maneuvering load due to basket installation

$$P_{\text{ult}} := W_{\text{total}} \cdot n_{\text{man_ult}}$$

$$P_{\text{ult}} = 1811 \text{ lbf}$$

Ultimate maneuvering load due to basket installation

$$W_{\text{cargo}} := 200 \cdot \text{lbf}$$

Weight of cargo (max)

$$W_{\text{total}} := W_{\text{basket}} + W_{\text{cargo}}$$

$$W_{\text{total}} = 245 \text{ lbf}$$

Total weight of basket installation (with cargo)

$$P_{\text{lim}} := W_{\text{total}} \cdot n_{\text{man}}$$

$$P_{\text{lim}} = 858 \text{ lbf}$$

Limit maneuvering load due to basket installation

$$P_{\text{ult}} := W_{\text{total}} \cdot n_{\text{man_ult}}$$

$$P_{\text{ult}} = 1286 \text{ lbf}$$

Ultimate maneuvering load due to basket installation

DRAG LOAD ON BASKET

$$l_{\text{basket}} := 65 \cdot \text{in}$$

Length of basket.

$$w_{\text{basket}} := 22.5 \cdot \text{in}$$

Width of basket.

$$h_{\text{basket}} := 17 \cdot \text{in}$$

Height of basket.

$$A_f := 385 \cdot \text{in}^2$$

Frontal Area of basket.

$$A_p := l_{\text{basket}} \cdot w_{\text{basket}}$$

Planar Area of basket.

$$A_p = 1463 \text{ in}^2$$

$$\frac{l_{\text{basket}}}{w_{\text{basket}}} = 2.9$$

Fineness ratio of basket

$$C_{D0} := 1.6$$

Drag Coefficient of Basket, (overestimated)
(Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

$$\rho := 0.002378 \cdot \frac{\text{slug}}{\text{ft}^3}$$

Density of air at Sea Level.

$$V_{\text{ne}} := 155 \cdot \text{knots}$$

Never-Exceed-Speed of MD600N
(Ref. Flight Manual.)

$$V_d := \frac{V_{\text{ne}}}{0.9}$$

Design Dive Speed of MD600N

$$V_d = 172 \text{ knots}$$

$$\text{Drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{D0}$$

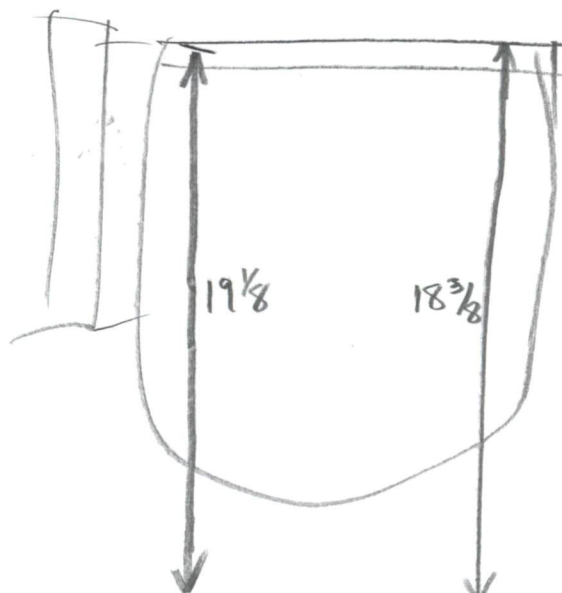
$$\text{Drag} = 430 \text{ lbf}$$

Limit drag on basket.

$$p_{\text{drag_test}} := \text{Drag} \cdot n_{\text{sf}}$$

$$p_{\text{drag_test}} = 645 \text{ lbf}$$

Ultimate Drag load on basket in Static Test.



START		R	R
0	19 1/2	18 3/8	"
600	19.0	17.0	"
600 w/ 200 DRAG		17 1/2 / 17 1/4	
900 43 w DRAG		17	17
Ø		18 1/4 / 8 1/8	

Step - 700 lbs

2x people
 ↓
 340 x 2g jumping

AERO DESIGN LTD.

2013 – 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027

Fax: 403-250-8333

www.aerodesign.ca

26 November, 2008

Transport Canada
Aircraft Certification Division
800-1601 Airport Road
Calgary, Alberta
T2E 6Z8

FAXED
27 NOV 2008
9:30 AM

Attn: Greg Oucharek

Your File : C-08-0969

Our File : 828/829

Re: McDonnell Douglas MD600N Cargo Basket / Cabin Step Installation

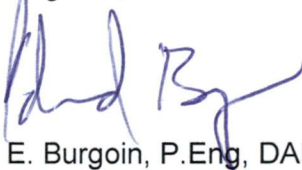
Greg,

Please find attached the following documents related to this project:

Modification Approval Request Application Form	MOD828	Rev. 0
Compliance Program	CP828	Rev. 0
Project Summary	PS828	Rev. 0
Compliance Program	CP829	Rev. 0
Project Summary	PS829	Rev. 0

Please extend my delegation to include the paragraphs indicated on the attached compliance programs.

Regards,



E. Burgoin, P.Eng, DAR 290M

Encl.

Title: Quick Release Cargo Basket Installation
Approval: STC
Manufacture: Mfd by Aero Design (amend Approved Product List)
Customer:
Type and Model: McDonnell Douglas MD600N

Definition Of Change:

Description:

Installation of Quick Release Mounting Provisions using the existing jack points under the cabin doors. The Provisions consists of a down tube, with a support inserted into the jack point, and strut tubes from the bottom of the provision to a pad installed under the cargo hook mount.

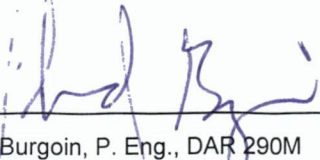
Installation of Quick Release Cargo Basket on the mounting provisions. The cargo basket is the same construction as other AERO Design Ltd. baskets, and uses the same attachment features.

Primary Changes to the Aeronautical Product:

Installation of Quick Release Mounting Provisions, Installation of Quick Release Cargo Basket.

Secondary Changes to the Aeronautical Product (Required as consequence of primary changes):

Other Relevant Modifications to the Aeronautical Product (Which impact on this change):

CHANGED PRODUCT RULE (CPR) DECISION RECORD	
NAPA No.:	
Step 1: Identify the proposed change to the aeronautical product. (Section 4.1 of AC 500-016)	The changes are as previously described.
Step 2: Is the change substantial? (Section 4.2 of AC 500-016)	<input type="checkbox"/> Yes A new type certificate is required. CPR Decision Process is Closed . <input checked="" type="checkbox"/> No Proceed to Step 3
Step 3: Will the latest standards be used? (Section 4.3 of AC 500-016)	<input type="checkbox"/> Yes Certification basis to use latest standards. CPR Decision Process is Closed . <input checked="" type="checkbox"/> No Proceed to Step 4.
Step 4: Is the proposed change significant? (Section 4.4 of AC 500-016)	<input type="checkbox"/> Yes Proceed to Decision. <input checked="" type="checkbox"/> No Compliance may be shown to earlier standards. Certification basis to be defined and documented as indicated (below). CPR Decision Process is Closed .
Decision: Will the latest standards be used?	<input type="checkbox"/> Yes Certification basis to use latest standards. CPR Decision Process is Closed . <input checked="" type="checkbox"/> No Proceed to Step 5, addressing each area separately (see below).
Identification of Affected Areas:	The area(s) affected by the proposed change have been detailed in Compliance Program: CP828
Note: A delegate may develop a proposal for the Yes/No decision of Step 6, however, TCCA will make the final determination.	
Area:	
Step 5: Is this area affected by the proposed change? (Section 6.1 of AC 500-016)	<input type="checkbox"/> Yes Proceed to Step 6. <input checked="" type="checkbox"/> No Compliance with the latest standards is not required. Compliance may be shown to earlier standards. Certification basis defined or documented as indicated below.
Step 6: Are the latest standards practical and do they contribute materially to the level of safety? (Section 6.2 of AC 500-016)	<input type="checkbox"/> Yes Certification basis to be established using latest standards. <input checked="" type="checkbox"/> No Compliance with the latest standards is not required. Compliance may be shown to earlier standards. Certification Basis defined or documented as indicated in below.
<input type="checkbox"/> Continuation Sheet(s) Attached	Note: Several standards may apply to each area and the assessment may differ from standard to standard. Indicate Yes if compliance with any latest standard(s) will be required. Indicate No only if no later standards are to be applied.
Certification Basis	The certification basis is as follows or as detailed in the listed document(s): McDonnell Douglas MD600N, TCDS : FAR 27, dated October 2, 1964, through Amendment 27-30 with the following deviations: 27.562 and 27.863 excluded; 27.561 at Amdt. 27-24; 27.607 at Amdt. 27-3; 27.785 at Amdt. 27-20; 27.1325 at Amdt. 27-12; Transport Canada CAM 527, change 3 dated January 1, 1994: 527.1093(b)(iii); 527.1301-1; 527.1557(c)(3); 527.1581(e); 527.1585(h)
Under the delegated authority, I have examined the change in type design listed above according to established procedures and hereby determine, to the best of my knowledge and belief, that it is. (check one)	
<input type="checkbox"/> substantial, pursuant to subsection 511.14 or 513.14 of the CARs <input type="checkbox"/> significant, pursuant to subsection 511.13(3) or 513.07(3) of the CARs <input checked="" type="checkbox"/> not significant, pursuant to subsection 511.13(3) or 513.07(3) of the CARs	
 E. Burgoin, P. Eng., DAR 290M	24 November, 2008 Date

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

APPLICANT: AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta, T2E 6R7

DATE: 24 November, 2008
REV. No. 0

CORRESPONDANCE TO:
(If other than applicant)

MAKE: McDonnell Douglas
MODEL: 600N

REGISTRATION: All Applicable
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Mounting Provisions; Installation of Quick Release Cargo Basket

MODEL CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.

MODIFICATION CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.

Airworthiness Requirement		Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
Paragraph	Amdt.					
Subpart B – Flight						
27.27	30	Centre of Gravity Limits	N/A			No change from Type Approval.
27.29	30	Empty Weight and Corresponding C of G	Data specified on inst'n drawing		X	
27.51	30	Takeoff	Flight Test	X		
27.65	30	Climb: All Engines Operating	Flight Test	X		
27.71	30	Gliding Performance	Flight Test	X		
27.75	30	Landing	Flight Test	X		
27.141	30	Flight Characteristics – General	Flight Test	X		
27.143	30	Controllability and Maneuverability	Flight Test	X		
27.151	30	Flight controls	Flight Test	X		
27.161	30	Trim	Flight Test	X		
27.171	30	Stability – General	Flight Test	X		
27.173	30	Longitudinal Stability	Flight Test	X		
27.175	30	Demonstration of Longitudinal Stability	Flight Test	X		
27.177	30	Static Directional Stability	Flight Test	X		
27.241	30	Ground Resonance	Flight Test	X		
27.251	30	Vibration	Flight Test	X		
Subpart C – Strength Requirements						
27.301	30	Loads – Air Drag Loads	Analysis		X	
27.301	30	Loads – Inertia Loads	Compliance with 27.337 and 27.561		X	

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

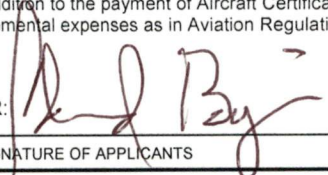
Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
27.303	30 Factor of Safety	Analysis		X	
27.305	30 Strength and Deformation	Analysis and Test iaw AC 43.13-1A		X	
27.307	30 Proof of Structure	Analysis and Test iaw AC 43.13-1A		X	
27.337(a)	30 Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1A		X	Critical load factor in downward direction.
27.547	30 Main Rotor Structure	Flight Test	X		See comments for flight test above
27.561	24 Emergency Landing Conditions	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(i)	24 Emergency Landing Conditions – Up	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(ii)	24 Emergency Landing Conditions – Fwd	N/A			Forward deflection or failure of basket poses no threat to occupants.
27.561(b)3(iii)	24 Emergency Landing Conditions – Side	Analysis and Test iaw AC 43.13-1A		X	
27.561(b)3(iv)	24 Emergency Landing Conditions – Down	Compliance with 27.337		X	27.337 Maneuvering Load is Critical.
Subpart D – Design and Construction					
27.601	30 Design	Drawings		X	Design is conventional.
27.603	30 Materials	Drawings		X	Materials used are specified in Mil-Hdbk-5H.
27.605	30 Fabrication Methods	Drawings		X	Design is conventional.
27.609	30 Protection of Structure	Drawings		X	
27.611	30 Inspection Provisions	Drawings		X	Design is easy to inspect.
27.613	30 Material Strength Properties and Design Values	Values used as per Mil-Hdbk-5H		X	
27.625	30 Fitting Factor	Analysis		X	
27.783	30 Doors	N/A			Installation does not block doors.
27.787(a)	30 Cargo and Baggage Compartments	Compliance with 23.301 through 307		X	
27.787(b)	30 Cargo and Baggage Compartments	Design		X	Basket is a closed container.
27.787(c), (d)	30 Cargo and Baggage Compartments	N/A			Cargo is external to helicopter.
27.807	30 Emergency Exits	N/A			Installation does not block doors.
27.865(a)	30 External Load Attaching Means	Compliance with 27.337		X	
27.865(b), (c)	30 External Load Attaching Means	N/A			
27.865(d)	30 External Load Attaching Means	N/A			Failure of an attachment does not endanger the rotorcraft.
27.1387	30 Position Light System Dihedral Angles	N/A			No change from Type Approval.
27.1401	30 Anticollision Light System	N/A			No change from Type Approval.
Subpart G – Operating Limitations and Information					
27.1505	30 Never Exceed Speed	Flight Test, Flight Manual Supplement	X		V _{NE} limits as specified in the existing Flight Manual (155 kts.)

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
27.1525	30 Kinds of Operation	Flight Manual Supplement	X		Limited to VFR only.
27.1529	30 Instructions for Continuing Airworthiness	ICA Provided	X		
27.1557(a)	30 Miscellaneous Markings and Placards – Baggage Compartments	Placard		X	
27.1557(b)	30 Miscellaneous Markings and Placards	N/A			
27.1557(c)	30 Miscellaneous Markings and Placards	N/A			
27.1557(d)	30 Miscellaneous Markings and Placards	N/A			
27.1581	30 Rotorcraft Flight Manual – General	Flight Manual Supplement	X		
27.1583(c)	30 Operating Limitations – Weight and Loading Information	Flight Manual Supplement	X		
27.1585	30 Operating Procedures	Flight Manual Supplement	X		
27.1587	30 Performance Information	Flight Manual Supplement	X		
27.1589	30 Loading Information	Flight Manual Supplement & Placard	X		Placard installed on basket lid
Airworthiness Manual Requirements					
527.1581(e)	Rotorcraft Flight Manual – Units	SI and Imperial Units provided in Flight Manual Supplement	X		

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD828, Rev. 0

1. NAME AND ADDRESS OF APPLICANT:		2. IDENTIFICATION OF PRODUCT					
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7		MAKE: McDonnell Douglas		MODEL: MD600N			
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7		SERIAL No.: All Eligible		REGISTRATION: All Eligible			
3. REQUEST FOR:							
A. SUPPLEMENTAL TYPE CERTIFICATE (STC)		<input checked="" type="checkbox"/>					
B. STC/STA REVISION		<input type="checkbox"/> STC/STA No.					
C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)		<input type="checkbox"/>					
D. LIMITED STC/STA REVISION		<input type="checkbox"/> LSTC/LSTA No.					
E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE		<input type="checkbox"/>					
F. F.A.A. STC REVISION		<input type="checkbox"/> STC No.					
G. FAMILIARIZATION OF F.A.A. STC		<input type="checkbox"/> STC No.					
H. REPAIR DESIGN APPROVAL (RDC)		<input type="checkbox"/>					
I. PARTS DESIGN APPROVAL (PDA)		<input type="checkbox"/>					
4. TITLE OF MODIFICATION OR REPAIR: Quick Release Provisions Installation; Cargo Basket Installation; Step Installation							
5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR: Installation of Quick Release Provisions on the right and/or left side of the helicopter. Installation of Cargo Basket on the Quick Release Provisions. Installation of Step on Quick Release Provisions.							
6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:							
A. TA NO. H-95 B. TC No. C. OTHER							
7. PROPOSED BASIS OF APPROVAL:							
A. SAME AS TA <input checked="" type="checkbox"/> B. SAME AS TC <input type="checkbox"/> C. OTHER <input type="checkbox"/> (Please specify)							
8. DOCUMENTATION CHECKLIST			REQUIRED		FOR DOT USE ONLY		
					RECEIVED		
			YES	NO	YES	NO	DATE
COMPLIANCE PROGRAM			X				
MASTER DRAWING LIST			X				
FLIGHT MANUAL SUPPLEMENT			X				
MAINTENANCE MANUAL SUPPLEMENT				X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS			X				
ENGINEERING REPORTS			X				
DESIGN DRAWINGS				X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS			X				
ELECTRICAL LOAD ANALYSIS				X			
DRAFT STC, LSTC OR RDA				X			
WEIGHT AND MOMENT CHANGE			X				
FLIGHT TEST DATA			X				
OTHER (Specify)							
9. APPLICANT'S REMARKS:							
10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Canada incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.							
PER: 		Consultant		24 November, 2008			
SIGNATURE OF APPLICANTS		TITLE		DATE			
11.							
SIGNATURE OF REGIONAL ENGINEER				DATE			

AN490

AIR FORCE-NAVY AERONAUTICAL STANDARD

ROD END - THREADED, AIRCRAFT

SPECIFICATION
MIL-C-45918

FOR DESIGN PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
REVISIONS DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.

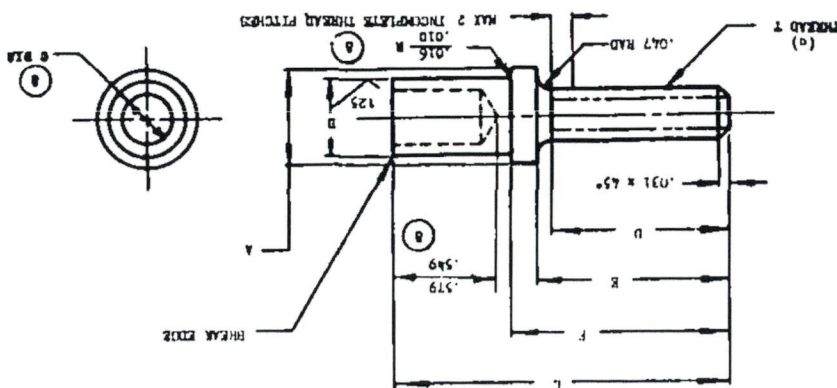
ALL DIMENSIONS SPECIFIED ARE TO BE MET AFTER PLATING.
DIMENSIONS IN INCHES, UNLESS OTHERWISE SPECIFIED, TOLERANCES: FRACTIONS $\pm 1/64$, DECIMALS ± 0.01 , ANGLES $\pm 1/2^\circ$.
ROD ENDS SHALL BE MADE FROM ALL HANDING BURNS AND SILVER WITH KNIGHT FINISH DISTILLED UNDER VACUUM.

EXAMPLES OF PART NOS: AN490T5 - ROD END - THREADED, 5/16 DIA, UNPLATED STEEL.
AN490T5P - ROD END - THREADED, 5/16 DIA, CADMIUM PLATED.
ADD P AFTER DASH NO. FOR PLATED ROD ENDS.

FINISH: CADMIUM PLATE SPECIFICATION MIL-S-6754 HEAT TREATED ROCKWELL C25 TO C30
MATERIAL: STEEL A130 SPECIFICATION MIL-S-6754 HEAT TREATED ROCKWELL C25 TO C30

- (c) THREADS SHALL BE FORMED BY ANY SUITABLE POLISH PROCESS MIL-C-7742.
(b) PART NOS. AN490T5 AND AN490T12 INACTIVE FOR DESIGN AFTER 8 FEBRUARY 1951, AND CANCELLED.
PART NO. AN490T12 IS A REPLACEMENT ITEM FOR AN490T5 AND AN490T16 IS A REPLACEMENT ITEM FOR AN490T12.
(a) PART NOS. AN490-5 THRU AN490-8 AND AN490-5P THRU AN490-8P INACTIVE FOR DESIGN AFTER 15 JULY 1949, AND CANCELLED.
PART NOS. AN490T5 THRU AN490T8 AND AN490T5P THRU AN490T8P ARE SUBSTITUTABLE FOR

PART NO.	TUBE SIZE	TUBE SIZE					D	R	F	L
		A	B DIA	C	D	E				
AN490T5	5/16 x .035	.312	.272	.125			±.010	±.010	±.010	±.010
AN490T6	1/4 x .035	.375	.305	.185			±.010	±.010	±.010	±.010
AN490T7	1/2 x .035	.500	.430	.281			±.010	±.010	±.010	±.010
AN490T8	3/8 x .035	.625	.555	.375			±.010	±.010	±.010	±.010
AN490T9	5/16 x .035	.625	.555	.375			±.010	±.010	±.010	±.010
AN490T10	5/16 x .035	.625	.555	.375			±.010	±.010	±.010	±.010
AN490T11	3/4 x .035	.750	.680	.500			±.010	±.010	±.010	±.010
AN490T12	3/4 x .035	.750	.680	.500			±.010	±.010	±.010	±.010
AN490T13	3/8 x .035	.625	.555	.375			±.010	±.010	±.010	±.010
AN490T14	3/8 x .035	.625	.555	.375			±.010	±.010	±.010	±.010
AN490T15	5/16 x .035	.625	.555	.375			±.010	±.010	±.010	±.010
AN490T16	1/2 x .035	.750	.680	.500			±.010	±.010	±.010	±.010



This military standard is mandatory for use by all Departments
a Division of the Department of Defense. Deviations for all new
specifications and design applications and for revision use shall
be made from this document.

Revised/over information is current as of the date of this document.
For future consideration of changes to this document, first circulation
shall be based on the information in the current revision.

REVISED SYMBOL:
NAVY - AS
USAF - 42
ADMN - AV

ROD SYMBOL:

APPROVED 12 SEP 52

REVISED

12 OCT 70

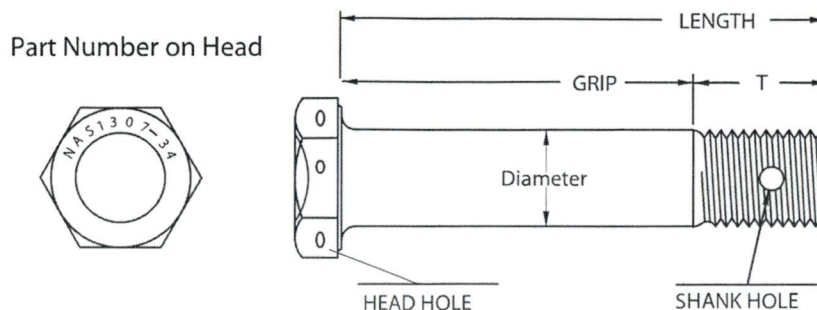
FIG 5.140

Project No. 3340-013

Genuine Aircraft Hardware Co.

NAS HEX Head Bolts

Diameter / Head Size / Hole Sizes/ Thread Lengths



Kits Available

HELP WITH THE SELECTION OF PART NUMBERS:

The first two numbers after "NAS" designates the Design and Material of the bolt.

The third and fourth number after "NAS" designates the diameter in 1/16" increments.

NAS11 { } BOLT, SHEAR-HEXAGON HEAD, SHORT THREAD, Alloy steel 160-180 ksi. Cad II plated.

NAS13 { } BOLT, SHEAR-HEXAGON HEAD, LONG THREAD, Alloy steel 160-180 ksi. Cad II plated.

NAS62 { } BOLT, HEX HEAD, CLOSE TOL., MEDIUM THREAD LENGTH. Alloy steel 160-180 ksi, Oversize and Self Locking available. Cad II Plated

NAS66 { } BOLT, HEX HEAD, CLOSE TOL., LONG THREAD LENGTH. Alloy steel 160-180 ksi, Oversize and Self Locking available. Cad II Plated

Inactive for design, 7/1/76 See NAS62{ } { }

Inactive for design, 10/81 See NAS66{ } { }

The last numerals { } in the part number designate grip lengths in 1/16ths of an inch. Add the "T" dimension to get overall length.

Grip length of bolts shall be measured from the underside of the head to the end of the full cylindrical portion of the shank.

Add "D" in the proper location for shank drill. If "D" is used then "L" or "P" are not. Add "H" in the proper location for head drill.

Add "W" in the proper location for Cad I (silver colored) plating. Add a "C" for chrome plated shank.

Add "X" or "Y" at the very end to designate an oversize bolt, X = .0156 Oversize, Y = .0312 Oversize diameter shank. The threads are normal size.

Add "P" for patch type locking element on threads. An "L" would allow patch or pellet type locking element.

Examples of Part Numbers:

Listing options and placement of option code letters; omit undesirable options from your part numbers.

Not all options are available for all bolts.

NAS1104-16, NAS1104-16D, NAS1104-16H, NAS1104-16DH, NAS1104-16DHW

Chrome, Oversize, or Locking not available.

NAS1304-16, NAS1304-16D, NAS1304-16H, NAS1304-16DH, NAS1304-16DHW

Chrome, Oversize, or Locking not available.

NAS6204-16, NAS6204-16D, NAS6204-16H, NAS6204-16DH, NAS6204L16, NAS6204P16, NAS6204C16, NAS6204-16X, NAS6204-16Y, ETC

NAS6604-16, NAS6604D16, NAS6604H16, NAS6604DH16, NAS6604L16, NAS6604P16, NAS6604C16, NAS6604-16X, NAS6604-16Y, ETC

NOTE: all dimensions in inches

NAS??{ }	THREAD	DIA.	DIA.	WRENCH	HOLE,SHANK	HOLE,HEAD	NAS11{ }	NAS13{ }	NAS62{ }	NAS66{ }
DIA	DIA/PITCH	MAX	MIN	SIZE	+.010, -.000	+.010, -.000	"T" length	"T" length	"T" length	"T" length
03	10-32	.1895	.1885	3/8"	.070	.046	0.276	0.338	0.323	0.345
04	1/4-28	.2495	.2485	7/16"			0.316	0.425	0.370	0.425
05	5/16-24	.3112	.3110	1/2"			0.375	0.469	0.438	0.469
06	3/8-24	.3745	.3735	9/16"	.106	.070	0.391	0.578	0.454	0.578
07	7/16-20	.4370	.4360	5/8"			0.453	0.594	0.528	0.694
08	1/2-20	.4995	.4985	3/4"			0.453	0.735	0.528	0.735
09	9/16-18	.5615	.5605	7/8"	.141		0.511	0.840	0.594	0.840
10	5/8-18	.6240	.6230	15/16"			0.543	0.902	0.626	0.902
12	3/4-16	.7490	.7480	1 1/16"			0.572	1.041	0.666	1.041
14	7/8-14	.8740	.8730	1 1/4"			0.652	1.184	0.759	1.184
16	1"-12	.9990	.9980	1 1/2"			0.770	1.309	0.895	1.309
18	1 1/8-12	1.124	1.1225	1 5/8"			0.864	1.458	0.969	1.458
20	1 1/4-12	1.249	1.2475	1 7/8"			0.958	1.646	1.063	1.646

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	0.0	43.0	0.0	13.5	0.0
Passenger (fwd centre)	0.0	41.0	0.0	0.0	0.0
Passenger (mid left)	0.0	72.5	0.0	-15.5	0.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	0.0	72.5	0.0	15.5	0.0
Passenger (aft left)	170.0	107.0	18190.0	-13.0	-2210.0
Passenger (aft right)	170.0	107.0	18190.0	13.0	2210.0
Subtotal GW (no fuel)	2710.6	101.3	274514.0	-1.1	-2941.0
Cargo Basket Provisions	11.2	85.6	958.7	-20.5	-229.6
Cargo Basket	45.0	82.1	3694.5	-39.8	-1791.0
Cargo	200.0	82.1	16420.0	-39.8	-7960.0
Subtotal GW (no fuel)	2966.8	99.6	295587.2	-4.4	-12921.6
Fuel	50.0	98.3	4915.0	0.0	0.0
Total GW	3016.8 ✓	99.6 ✓	300502.2	-4.3 ✓	-12921.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

Pilot / 2 aft Pax

Low fuel

Basket Full

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	0.0	43.0	0.0	13.5	0.0
Passenger (fwd centre)	0.0	41.0	0.0	0.0	0.0
Passenger (mid left)	0.0	72.5	0.0	-15.5	0.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	0.0	72.5	0.0	15.5	0.0
Passenger (aft left)	170.0	107.0	18190.0	-13.0	-2210.0
Passenger (aft right)	170.0	107.0	18190.0	13.0	2210.0
Subtotal GW (no fuel)	2710.6	101.3	274514.0	-1.1	-2941.0
Cargo Basket Provisions	11.2	85.6	958.7	-20.5	-229.6
Cargo Basket	45.0	82.1	3694.5	-39.8	-1791.0
Cargo	200.0	82.1	16420.0	-39.8	-7960.0
Subtotal GW (no fuel)	2966.8	99.6	295587.2	-4.4	-12921.6
Fuel	800.0	82.5	66000.0	0.0	0.0
Total GW	3766.8 ✓	96.0 ✓	361587.2	-3.4 ✓	-12921.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

Pilot / 2 aft Pax

Full fuel

Basket full

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	170.0	43.0	7310.0	13.5	2295.0
Passenger (fwd centre)	170.0	41.0	6970.0	0.0	0.0
Passenger (mid left)	0.0	72.5	0.0	-15.5	0.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	0.0	72.5	0.0	15.5	0.0
Passenger (aft left)	0.0	107.0	0.0	-13.0	0.0
Passenger (aft right)	0.0	107.0	0.0	13.0	0.0
Subtotal GW (no fuel)	2710.6	93.1	252414.0	-0.2	-646.0
Cargo Basket Provisions	11.2	85.6	958.7	-20.5	-229.6
Cargo Basket	45.0	82.1	3694.5	-39.8	-1791.0
Cargo	200.0	82.1	16420.0	-39.8	-7960.0
Subtotal GW (no fuel)	2966.8	92.2	273487.2	-3.6	-10626.6
Fuel	800.0	82.5	66000.0	0.0	0.0
Total GW	3766.8 ✓	<u>90.1</u>	339487.2	-2.8 ✓	-10626.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

Pilot / 2 pax Front

Full basket

Full fuel

Long. CG to far fwd

< 350 lbs fuel w/in limit

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	0.0	43.0	0.0	13.5	0.0
Passenger (fwd centre)	0.0	41.0	0.0	0.0	0.0
Passenger (mid left)	0.0	72.5	0.0	-15.5	0.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	0.0	72.5	0.0	15.5	0.0
Passenger (aft left)	0.0	107.0	0.0	-13.0	0.0
Passenger (aft right)	0.0	107.0	0.0	13.0	0.0
Subtotal GW (no fuel)	2370.6	100.5	238134.0	-1.2	-2941.0
Cargo Basket Provisions	11.2	85.6	958.7	-20.5	-229.6
Cargo Basket	45.0	82.1	3694.5	-39.8	-1791.0
Cargo	200.0	82.1	16420.0	-39.8	-7960.0
Subtotal GW (no fuel)	2626.8	98.7	259207.2	-4.9	-12921.6
Fuel	800.0	82.5	66000.0	0.0	0.0
Total GW	3426.8 ✓	94.9 ✓	325207.2	-3.8 ✓	-12921.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

Pilot only
full fuel
Basket full / left.

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	0.0	43.0	0.0	13.5	0.0
Passenger (fwd centre)	0.0	41.0	0.0	0.0	0.0
Passenger (mid left)	0.0	72.5	0.0	-15.5	0.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	0.0	72.5	0.0	15.5	0.0
Passenger (aft left)	0.0	107.0	0.0	-13.0	0.0
Passenger (aft right)	0.0	107.0	0.0	13.0	0.0
Subtotal GW (no fuel)	2370.6	100.5	238134.0	-1.2	-2941.0
Cargo Basket Provisions	11.2	85.6	958.7	-20.5	-229.6
Cargo Basket	45.0	82.1	3694.5	-39.8	-1791.0
Cargo	200.0	82.1	16420.0	-39.8	-7960.0
Subtotal GW (no fuel)	2626.8	98.7	259207.2	-4.9	-12921.6
Fuel	50.0	98.3	4915.0	0.0	0.0
Total GW	2676.8 ✓	98.7 ✓	264122.2	-4.8 ✓	-12921.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

Pilot only

low fuel

Basket full left

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	170.0	43.0	7310.0	13.5	2295.0
Passenger (fwd centre)	0.0	41.0	0.0	0.0	0.0
Passenger (mid left)	0.0	72.5	0.0	-15.5	0.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	170.0	72.5	12325.0	15.5	2635.0
Passenger (aft left)	0.0	107.0	0.0	-13.0	0.0
Passenger (aft right)	170.0	107.0	18190.0	13.0	2210.0
Subtotal GW (no fuel)	2880.6	95.8	275959.0	1.5	4199.0
Cargo Basket Provisions	11.2	85.6	958.7	20.5	229.6
Cargo Basket	45.0	82.1	3694.5	39.8	1791.0
Cargo	200.0	82.1	16420.0	39.8	7960.0
Subtotal GW (no fuel)	3136.8	94.7	297032.2	4.5	14179.6
Fuel	50.0	81.6	4080.0	0.0	0.0
Total GW	3186.8 ✓	94.5 ✓	301112.2	4.4 ✓	14179.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

3 x Right Pax

Basket Right / Full

- More fuel brings lateral arm in
- Cannot max fuel, hit max GW

Sample Weight and Balance for Quick Release Cargo Basket

Using sample from MD600N Flight Manual

Mid passengers aft facing, fwd facing arm 74.0

Includes all seats, trim, instruments, cargo hook, etc.

Basket on left

Description	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Basic Weight	2200.6	104.9	230824.0	-0.3	-561.0
Pilot	170.0	43.0	7310.0	-14.0	-2380.0
Passenger (fwd right)	0.0	43.0	0.0	13.5	0.0
Passenger (fwd centre)	0.0	41.0	0.0	0.0	0.0
Passenger (mid left)	170.0	72.5	12325.0	-15.5	-2635.0
Passenger (mid centre)	0.0	72.5	0.0	0.0	0.0
Passenger (mid right)	0.0	72.5	0.0	15.5	0.0
Passenger (aft left)	170.0	107.0	18190.0	-13.0	-2210.0
Passenger (aft right)	0.0	107.0	0.0	13.0	0.0
Subtotal GW (no fuel)	2710.6	99.1	268649.0	-2.9	-7786.0
Cargo Basket Provisions	11.2	85.6	958.7	-20.5	-229.6
Cargo Basket	45.0	82.1	3694.5	-39.8	-1791.0
Cargo	200.0	82.1	16420.0	-39.8	-7960.0
Subtotal GW (no fuel)	2966.8	97.7	289722.2	-6.0	-17766.6
Fuel	50.0	81.6	4080.0	0.0	0.0
Total GW	3016.8 ✓	97.4 ✓	293802.2	-5.9	-17766.6
Limits	2170.0	91.0		-5.0	
	3850.0	100.0		5.0	

Pilot/ 2 x left Pax

Basket left/Full

over lateral limit

must have 600 lbs fuel or more.



Transport
Canada

Transports
Canada

Type Certificate Data Sheet

(Continuation Sheet)

Number: H-95 Issue: 5

2. MODEL 600N (Normal Category) Approved November 17, 1997

Except as otherwise noted below, the conditions and limitations prescribed by this data sheet are those specified in FAA Type Certificate Data Sheet H3WE, Revision 21, dated May 10, 2003. Subsequent revisions to FAA Type Certificate Data Sheet H3WE are not applicable to Canadian registered aircraft.

Basis of Certification Transport Canada Additional Airworthiness Requirements as published in the Canadian Airworthiness Manual, Chapter 527, change 3 dated 1 January 1994:.

527.1093(b)(iii)	Induction System Icing Protection.
527.1301-1	Rotorcraft operations after Ground Cold Soak
527.1557(c)(3)	Miscellaneous Markings and Placards
527.1581(e)	Rotorcraft Flight Manual (Units)
527.1585(h)	Operating Procedures

DATA PERTINENT TO ALL MODELS EXCEPT AS INDICATED

Import Requirements

The import documentation must include:

- a) A United States Certificate of Airworthiness for Export to Canada signed by a representative of the Federal Aviation Administration (FAA);
- or
- b) A Certificate of Airworthiness for Export signed by the Airworthiness Authority of a country with whom Canada has a Bilateral Airworthiness agreement.

In case a) or b) the C of A must contain the following statement:

"The aircraft identified by this Certificate has been examined and found to conform to the Canadian Department of Transport Aircraft Type Certificate H-95"

or

- c) Other procedures approved by the Minister of Transport.

VII. Model 600N (Normal Category Helicopter) Approved May 15, 1997

Aircraft Type Designator HU60
(FAA & ICAO)

Engine Allison 250-C47M

Fuel Mil-T-5624, Grade JP-4 or JP-5, Mil-T-83133, Grade JP-8
Aviation turbine fuels ASTM-D1655, Jet A or A-1 or Jet B.

Note: Fuels containing Tri-Cresyl-Phosphate additives shall not be used.

Fuel Additives See NOTE 10 of Engine TCDS No. E1GL.
Engine Oil Engine oil conforming to MIL-L-7808G or Mil-L-23699 and subsequent
revisions are authorized for use. See Allison Engine Company Operation and
Maintenance Manual, CSP21004 (latest revision), for approved oil
manufacturers.

Engine Limits Ratings

	Takeoff (5 min.)	Max. Continuous
Shaft Horsepower	600 shp	530 shp
Torque	524 ft-lb. (600 Q ⁽³⁾)	463 ft-lb. (530 Q ⁽³⁾)
Gas Producer rpm (N1)	53,550 (105%)	53,550 (105%)
Output Shaft and Power Turbine rpm (N2)	(Same as Continuous.)	6858 rpm output shaft, 34,941 rpm power turbine (114%) ⁽²⁾ at autorotation torque varying linearly to 6443 rpm output shaft, 32,826 rpm power turbine (107.1%) at 590 ⁽¹⁾ ft-lbs torque.
Turbine Outlet Temp.	1435°F (779°C)	1340°F (727°C) less than 10,000 ft. pressure altitude. 1256°F (680 °C) 10,000 ft. pressure altitude or greater.

Transient Limits

Condition	Time Limit	Parameter Limit
Torque	10 seconds	576 ft-lbs (660 Q ⁽³⁾)

Turbine Outlet Temp (TOT)

Start and Shutdown	10 seconds	1550°F (843°C) to but not including 1700°F (927°C)
Start and Shutdown	1 second	1700°F (927°C)
During Power Change in Flight	12 seconds	1435°F (779°C) to 1662°F (905°C)
Gas Producer rpm, N1	10 seconds	54060 rpm, 106 %
Output Shaft and Power Turbine rpm, N2	15 seconds	7159 rpm output shaft, 36,474 rpm power turbine (119%) ⁽²⁾ at autorotation torque varying linearly to 6557 rpm output shaft, 33,409 rpm power turbine (109%) at 590 ⁽¹⁾ ft-lbs torque.

⁽¹⁾Note: Aircraft torque limit is 524 ft-lbs.

⁽²⁾Note: Aircraft Rotor RPM limit is 106.4%.

⁽³⁾Note: Torque Unit.

Rotor Limits and Engine Operating Speeds

Power Off (Rotor Tach)	Power On (Rotor / Engine Tach)
Maximum - 506 rpm (106.4%)	Maximum - 480.1 rpm / 101% ⁽³⁾ N ₂
Minimum - 428 rpm (90%)	Minimum - 470.6 rpm / 99% ⁽³⁾ N ₂

⁽³⁾Note: ECU Governs Rotor RPM between 99.25% and 100.75%

Airspeed Limits

V_{NE} (Never Exceed Speed) power-on at sea level is 155 knots (178 mph) IAS for 3600 lbs. or less internal gross weight; 145 knots (167 mph) IAS for 3601 lbs. to 3800 lbs. internal gross weight; 135 knots (156 mph) IAS for 3801 lbs or more internal gross weight. V_{NE} power-off (autorotation) at sea level is 115 knots (132 mph) IAS. For reduction of V_{NE} with altitude and temperature, see FAA approved Rotorcraft Flight Manual.

Center of Gravity

See FAA approved Rotorcraft Flight Manual for variation of CG limit with gross weight, nominal limits are 91.0 to 100.0 longitudinal, -5.0 to +5.0 lateral.

Leveling Means

Plumb bob at sta. 81.54

Maximum Weight

4,100 lbs. (1860 kg) at sea level. See RFM for variation of maximum weight with density altitude. See NOTE 16 for weight and balance report.

Minimum Crew

1 (pilot)

Maximum Occupants

8 (includes crew)

Maximum Cargo

1350 lbs. at 115 lb. / sq. ft., sta. 48.5 to 124.0
612 kg at 561.5 kg / sq. meter, sta 48.5 to 124.0

Outside Air Temp. Limits -40° to + 51.9° C (-40° to +125°F)
(OAT at Sea Level See RFM for variation at altitude)

Engine Cold Start Limits -40°C (-40°F)

Fluid Capacity

		Liters	Imp. Gals	U.S. Gals
Fuel	Usable	433.8	95.5	114.6
Fuel	Unusable	6.1	1.3	1.6
	Total	439.9	96.8	116.2
Main Trans. Oil	Total	6.62	1.46	1.75
Hydraulic Fluid (Rotor Brake)	Total	0.118	0.026	0.031
Engine Oil	Total	2.95	0.65	0.78

Maximum Operating Altitude / 20,000-ft. density altitude, 19,000 ft. pressure altitude with JP-4 or Jet B, or 20,000 ft. pressure altitude with Jet A, Jet A-1, JP-5, or JP-8 whichever is lower.

Main Rotor Blade Movements

Collective Pitch (relative to rigging position):

up to down	17.1° to 21.6°
------------	----------------

Cyclic (relative to rigging position):

forward	18.2° to 19.7°
aft	11.5° to 13.5°
left	7.6° to 9.6°
right	5.2° to 7.2°

Fan Blade Movements

Minimum	26° ± 1°
Full Right Pedal	54° ± 2°
Full Left Pedal	73° ± 2°

Horizontal Stabilizer Incidence -1.9° nose down with respect to waterline plane.

Vertical Stabilizer Movements

Vertical Stabilizers (relative to rigging position):

	Left	Right
Leading Edge Left	$-10.5^{\circ} \pm .5^{\circ}$	$-14.5^{\circ} \pm .5^{\circ}$
Leading Edge Right	$+23.5^{\circ} \pm 1^{\circ}$	$+19.5^{\circ} \pm 1^{\circ}$
Travel, minimum linear inches at trailing edge	7.1 inches	7.1 inches

Certification Basis

FAR 27, dated October 2, 1964, through Amendment 27-30 with the following deviations:

27.562 and 27.863 excluded (earlier models did not have these requirements);
 27.561 at Amendment 27-24;
 27.607 at Amendment 27-3;
 27.785 at Amendment 27-20;
 27.1325 at Amendment 27-12.

High Intensity Electromagnetic Radiation Fields (H.I.R.F.) protection, Special Condition per FAR 21.16 effective January 29, 1997, as published in the Federal Register FR 66, Page No. 4134, dated January 29, 1997. FAR 36, Appendix J, Amendment 36-21. Equivalent safety finding for compliance to 27.1549(b) for the N1 gage.

Serial Numbers Eligible

S/N RN003 and subsequent

Required Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the following items of equipment are required:

Approved Flight Manual CSP-600NRFM-1 or latest
 FAA approved revision

Approved Publications

Approved Flight Manual CSP-600NRFM-1 or latest
 FAA approved revision.

Airworthiness Limitation Section (ALS) Section 04-00-00 of the MDHS Model Helicopters Model 600N Basic Handbook of Maintenance Instructions (CSP-600HMI-2)

Data Pertinent to all Models

Datum

100 inches forward of main rotor centerline.

Other Operating Limitations

See Rotorcraft Flight Manual.
 See NOTE 2 for required placards.

DZUS® Lockwell® LH Quick Release Pins Double Acting

DZUS®
QUICK ACCESS



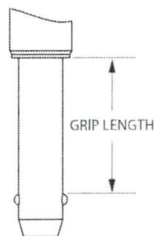
Selecting

The LH Series offers several all-alloy handle styles, all of which feature a double acting, spring-loaded push/pull mechanism.

To complete the part number, as detailed at the bottom of the opposite page, you will need to determine the following:

1. Shank Diameter: See performance information on Introduction pages. Find diameter code in the Dimensions table opposite.
2. Material: See performance information on Introduction pages.
3. Handle Style
4. Grip Length: This is the load bearing area on the Lockwell® quick-release pin and is measured from shoulder to the tangent point where the ball intersects the shank diameter.

Grip length for Lockwell pins is always specified in thousandth-inch increments, e.g., 500 equals 1/2" grip length.



Specifications

Part	Alloy Steel Models	CRES Models
Shank & Spindle	4130 Steel per AMS 6360 & AMS-S-6758	Corrosion resistant steel 17-4 per AMS 5643 or equivalent
Balls	Corrosion resistant steel 440-C per AMS-QQ-S-763, Rc 58-62	Corrosion resistant steel 440-C per AMS-QQ-S-763, Rc 58-62
Button	Carbon steel per ASTM A108	Corrosion resistant steel 303 per AMS 5640
Handle	Carbon steel per ASTM A108	Corrosion resistant steel 303 per AMS 5640
Handle Ring	Corrosion resistant steel 302 per ASTM A313 or music wire per ASTM A228	Corrosion resistant steel 302 per ASTM A313
Spring	Music Wire per ASTM A228	Corrosion resistant steel type 302 per ASTM A313
Attaching Link	Carbon steel wire per ASTM 227 or corrosion resistant steel 302 per ASTM A313	Corrosion resistant steel 302 per ASTM A313

Heat Treatment - Shank & Spindle

Alloy Steel: 160,000/180,000 PSI per AMS-H-6875
CRES: 17-4-PH, 190,000 PSI Min per AMS-H-6875, PH 15-7 MO, 180,000 PSI Min. per AMS-H-6875

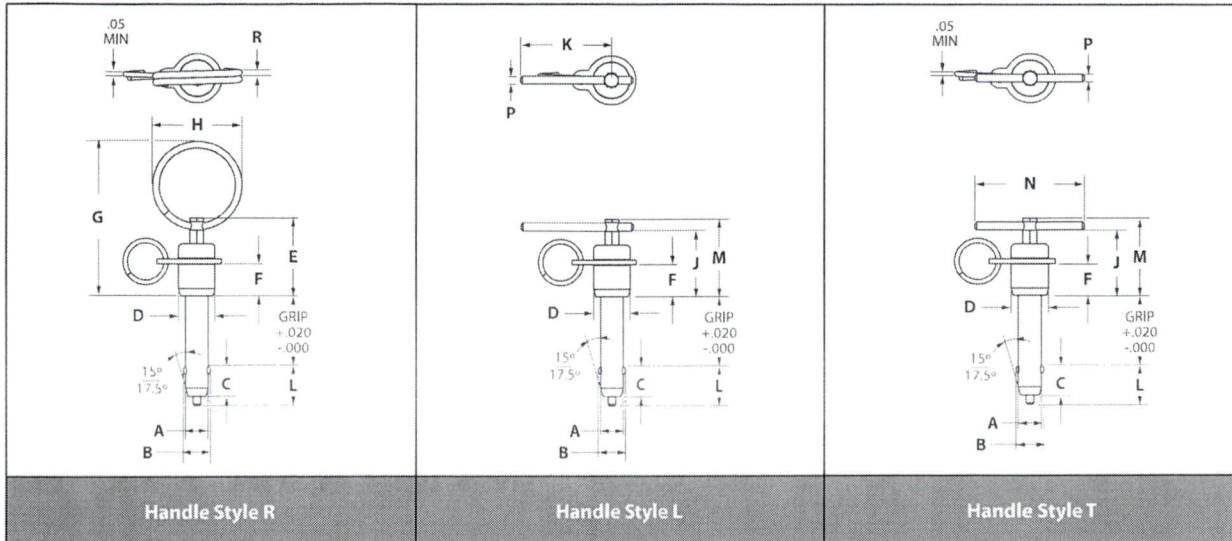
Protective Treatment

Carbon and Alloy Steel: Cadmium plate per AMS-QQ-P-416, Type II Class 2
CRES: Passivate per ASTM A967
Aluminum Alloy: Anodize per AMS-A-8625

DZUS® Lockwell® LH Quick Release Pins Double Acting

DZUS®
QUICK ACCESS

Styles



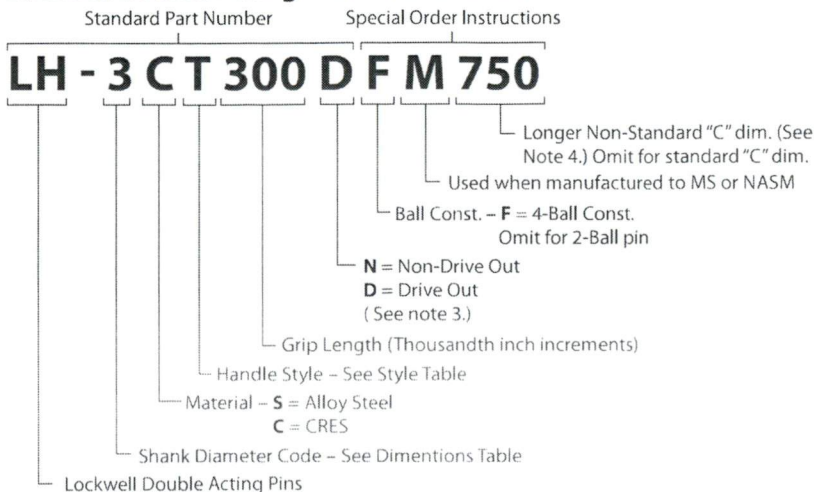
Dimensions

Shank DIA.		Dimensions															
Size	Code ¹	A Min.	A Max.	B ±.005	C Max.	D Max.	E Min.	F Max.	G Max.	H Max.	J Min.	K Max.	L Max.	M Max.	N Min.	P Min.	R Max.
3/16	3	.1885	.1870	.220	.410	.450	.935	.480	1.945	1.125	.780	1.300	.50	1.030	1.375	.105	.080
1/4	4	.2485	.2470	.289	.410	.450	.935	.480	1.945	1.125	.780	1.300	.50	1.030	1.375	.105	.080
5/16	5	.3110	.3095	.375	.440	.505	.935	.480	1.945	1.125	.780	1.300	.55	1.030	1.375	.105	.080
3/8	6	.3735	.3720	.440	.510	.630	1.000	.540	2.025	1.125	.830	1.500	.64	1.090	1.875	.134	.080
7/16	7	.4360	.4345	.509	.510	.630	1.000	.540	2.025	1.125	.830	1.500	.64	1.090	1.875	.134	.080
1/2	8	.4985	.4970	.594	.590	.755	1.070	.540	2.060	1.125	.880	1.655	.75	1.270	2.125	.200	.080
9/16	9	.5610	.5595	.666	.660	.755	1.070	.540	2.060	1.125	.880	1.655	.82	1.270	2.125	.200	.080
5/8	10	.6235	.6220	.750	.750	.870	1.250	.575	2.550	1.500	1.000	1.810	.93	1.465	2.375	.231	.120
3/4	12	.7485	.7470	.887	.790	.960	1.250	.595	2.550	1.500	1.000	1.810	.97	1.465	2.375	.231	.120
7/8	14	.8735	.8720	1.046	.950	1.150	1.500	.730	2.770	1.500	1.180	2.250	1.18	1.640	2.750	.231	.120
1	16	.9985	.9970	1.219	1.100	1.280	1.700	.865	2.950	1.500	1.320	2.250	1.35	1.830	2.750	.231	.120

Note:

1. Use to complete part number.

Lockwell Double Acting Pins Part Numbers



Double Acting Notes:

1. All pins can be ordered to the procurement specifications NASM 23460 and are QPL listed on NASM 17988 thru NASM 17990 and NAS 1353 thru 1366. Commercial grade pins are also available.
2. Attaching links standard on all pins.
3. Double acting pins are available with a drive-out feature. This feature is employed where removal of pin is necessary while in a shear loaded condition. To order drive-out, see part number example.
4. If greater "C" dimension is necessary add length in thousandth of an inch after "F" letter. Example: LG3CT300F750 (.750 inch)
5. Pins are identified per AMS-STD-130 and applicable specification.
6. Double acting pins are available in metric sizes. Specify when ordering.
7. Custom lengths require a 25 piece minimum order quantity. Contact Southco customer service or your local Southco Representative for pricing and availability.

All dimensions on this page are in inches.

3.5.12 Locking element tensile strength. The pins shall conform to the minimum tensile strength values specified in Table II (see 4.6.6).

3.5.13 Handle tensile strength. The pin handles shall be subjected to tensile loading per Table II (see 4.6.7 and Figure 4). The handles shall show no evidence of failure or distortion when subjected to this test. This requirement is not applicable to ring handle pins.

TABLE II. Performance characteristics.

Nominal diameter (inch)	Double Shear strength (lb-min)		Locking element tensile strength (lb-min)	Release mechanism actuating force (lb)		Locking element push-out force (lb-min)	Handle Tensile Strength (lb-min)
	Steel	Cres		Min	Max		
.1875	4,600	5,150	200	1	5	10	500
.2500	8,200	9,200	230	1	5	15	500
.3125	12,800	14,400	510	2	7	15	500
.3750	18,400	20,600	575	2	7	15	500
.4375	25,000	28,000	710	3	10	30	500
.5000	32,800	36,800	1,160	3	10	30	500
.5625	41,200	46,000	1,420	3	10	30	500
.6250	51,200	57,500	2,070	3	10	30	500
.7500	73,600	82,500	2,950	4	13	30	500
.8750	100,000	112,500	3,900	4	13	30	500
1.0000	131,000	147,000	5,480	7	25	30	500

3.5.14 Endurance. Pins shall function satisfactorily when tested in accordance with 4.6.3.

3.5.15 Temperature limits. Pins shall function satisfactorily and be hand operable at temperatures from -65°F to +200°F.

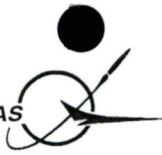
3.5.16 Corrosion. The pins shall be subjected to the corrosion test (see 4.6.10). Upon completion of the test, the pins shall meet the release actuating force values in Table II.

3.5.17 Sand and dust. The pins shall be subjected to the sand and dust test (see 4.6.11). Upon completion of the test, the pins shall meet the release actuating force values in Table II.

3.5.18 Hardness. Alloy steel pins shall have a Rockwell hardness in the range of C36 to C40 (see 4.6.12). Corrosion-resistant steel pins shall be heat treated per MIL-H-6875, CH-900 condition for PH15-7Mo and H900 condition for 17-4PH and 15-5PH, Rockwell C40 minimum.

3.6 Interchangeability. All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable. The drawing number requirements of MIL-T-31000 shall govern changes in the manufacturer's part number.

3.7 Identification of product. Pins shall be marked in accordance with MIL-STD-130 on the handle of the head.



2-3. AIRSPEED LIMITATIONS

V_{NE} is 155 KIAS or less - Ref. Figure 2-7 V_{NE} Placards

V_{NE} is 115 KIAS or less during autorotation - Ref. Figure 2-7 V_{NE} Placards

V_{NE} is 115 KIAS or less during doors off flight - Ref. Figure 2-7 V_{NE} Placards

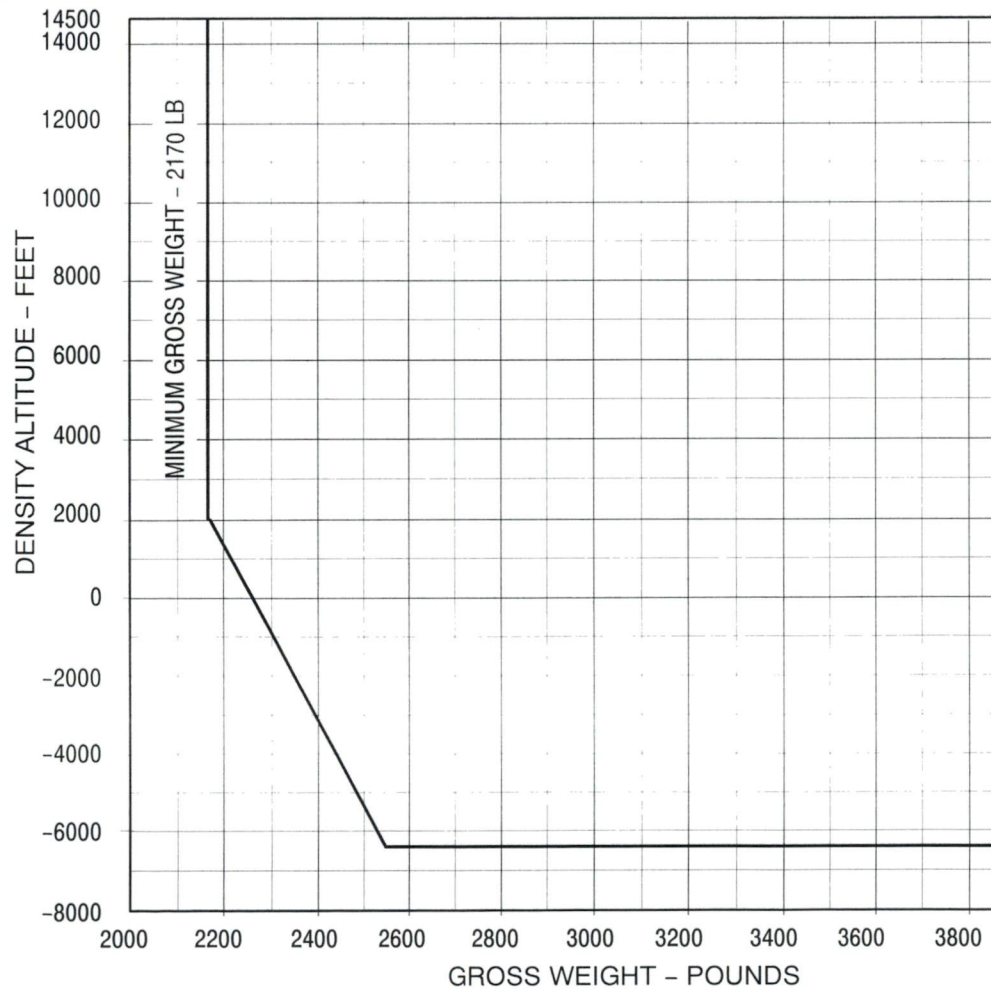
2-4. WEIGHT LIMITATIONS

For internal gross weight operations above 3850 LB, refer to Section XI.

Maximum gross weight: 3850 LB.

Minimum flying gross weight: Refer to Figure 2-2

Cargo deck capacity: 1350 lbs. (not to exceed 115 lbs. per square foot).



F60-044D

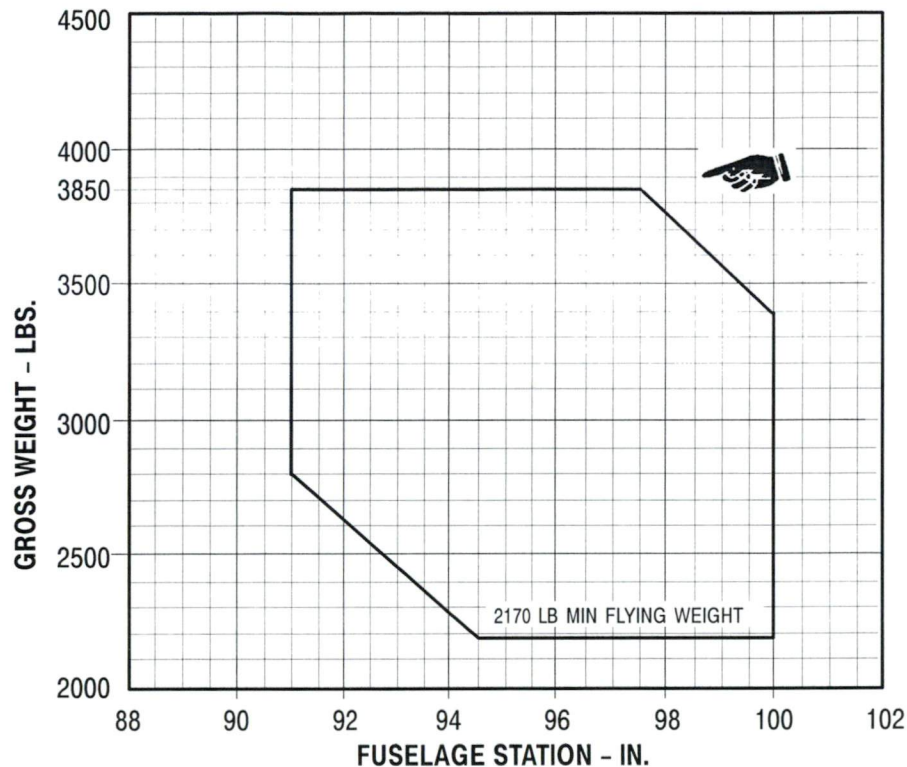
NOTE: To determine density altitude, refer to Section V, Density Altitude Chart.

Figure 2-2. Minimum Flying Weight

**CG Limits:**

Ensure helicopter CG and weight are within approved limits throughout flight.

Lateral CG limits: ± 5.0 In.



F60-006B

Figure 2-3. Longitudinal Center of Gravity Envelope

2-5. ROTOR BRAKE LIMITATIONS (IF INSTALLED)

The rotor brake must be in the stowed position prior to engine starting.

The rotor brake may be applied after engine shutdown with ROTOR RPM (N_R) at or below 41%.

2-6. ROTOR RPM (SPEED) LIMITATIONS

Maximum: 106.4%

Minimum: 90%



2-7. POWERPLANT LIMITATIONS

Engine torque (Q) limits:

Maximum takeoff (5 minute): 600 Q

Maximum continuous: 530 Q

Transient limit:

Maximum transient: 660 Q for 10 seconds

Turbine Outlet Temperature limits:

Maximum takeoff (5 minute): 779°C

Maximum continuous <10,000Hp: 727°C

Maximum continuous >10,000Hp: 680°C

Transient limits:

During starting and shutdown: 843° - 927°C 10 seconds or less
with a momentary peak at 927°C
for 1 second

During power changes: 779° - 905°C 12 seconds or less

Power Turbine (N_P) speed limits:

Normal operating: 99% - 101%

Minimum allowable: 85%

Maximum allowable: 107.1%

Gas Producer (N₁) speed limits:

Maximum continuous: 105%

Transient limit: 106% for 10 seconds

Engine oil system limits:

Flight operation temperature limits: 0°C to 107°C

Flight operation pressure limits: 50 - 130 psi with the following minimums

50 psi when below 79 percent N₁

90 psi at 79 percent N₁

115 psi at 94 percent N₁ and above

SECTION VI WEIGHT AND BALANCE DATA

6-1. WEIGHT AND BALANCE CHARACTERISTICS

The weight and balance characteristics:

Maximum gross weight - 3850 LBS.

Minimum flying weight - 2170 LBS.

Longitudinal Reference Datum - 100 inches forward of rotor centerline (rotor hub centerline is located at Station 100).

Cargo Deck Capacity - 1350 LBS, not to exceed 115 LB per square foot.

Utility Stowage Compartment - Limited to 50 LBS.

Center of Gravity Limits:

Lateral "+" is right of centerline; lateral "-" is left of centerline when looking forward.

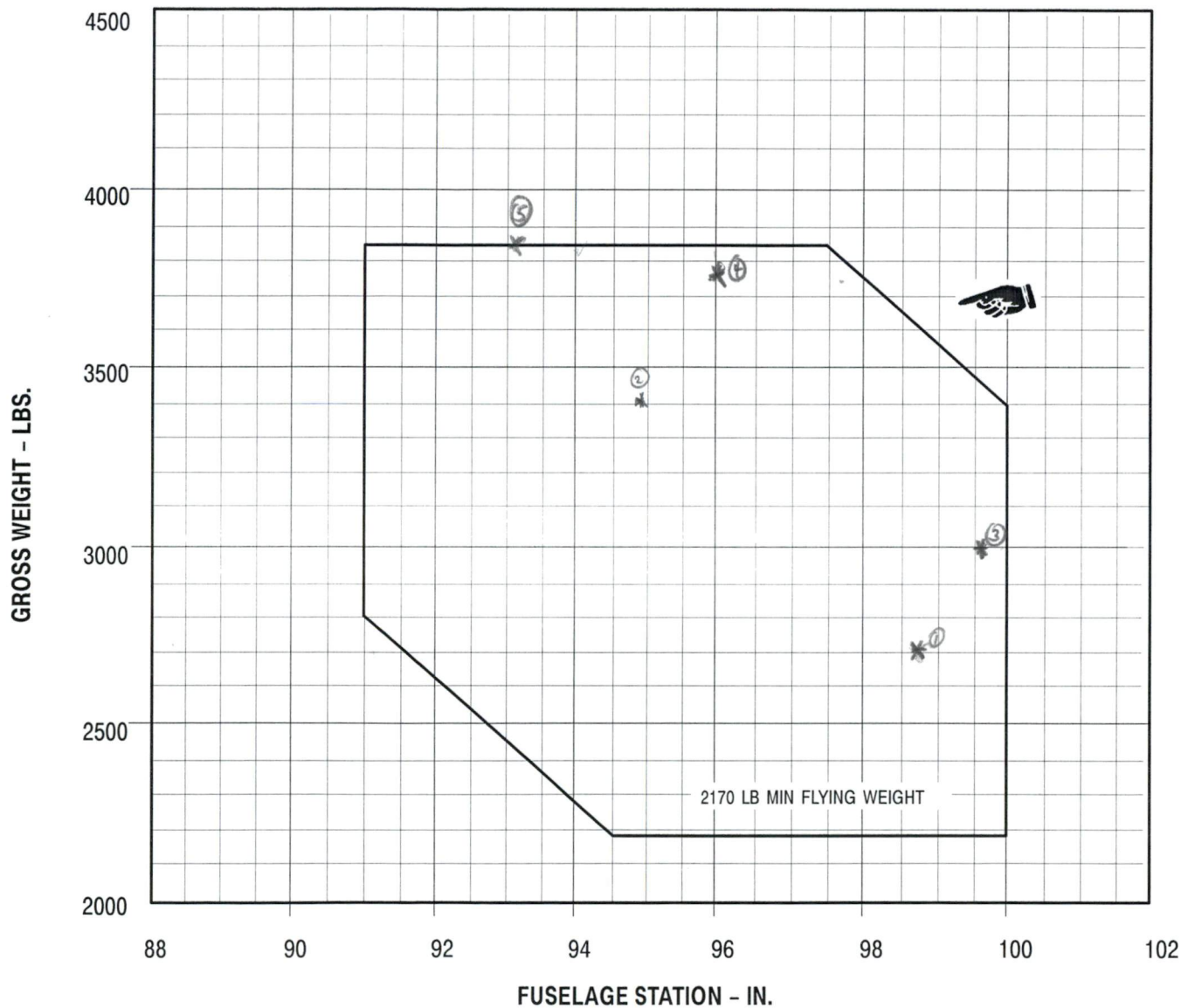
Table 6-1. Center of Gravity Limits

Gross Weight (LBS)	Longitudinal C.G. Limit (Sta-In.)		Lateral C.G. Limit (Sta-In.)
	Forward	Aft	(+) Right, (-) Left
3850	91.0	97.4	± 5
3400	91.0	100.0	± 5
2800	91.0	100.0	± 5
*2170	94.5	100.0	± 5

NOTE: The aft longitudinal C. G. limit varies linearly from a gross weight of 3400 LBS at Station 100.0 to 3850 LBS at Station 97.4.

The forward longitudinal C.G. limit varies linearly from a gross weight of 2170 LBS at Station 94.5 to 2800 LBS at Station 91.0

*Minimum Flying Weight



- ① Pilot only, full cargo, 50 lbs fuel lat -4.8
- ② Pilot only, full cargo, 800 lbs fuel lat -3.8
- ③ 2 aft pax, full cargo, 50 lbs fuel lat -4.3
- ④ 2 aft pax, full cargo, 800 lbs fuel lat -3.4
- ⑤ Pilot, FR/MR/LR/AL/AR pax, full cargo, 350 lbs fuel @ GW limit lat -2.8

F60-022B

Figure 6-1. Longitudinal Center of Gravity Envelope

Pilot, pax mid left, aft left, full cargo, 50 lbs fuel lat -5.9
 Original need at least 600 lbs fuel lat -5.0

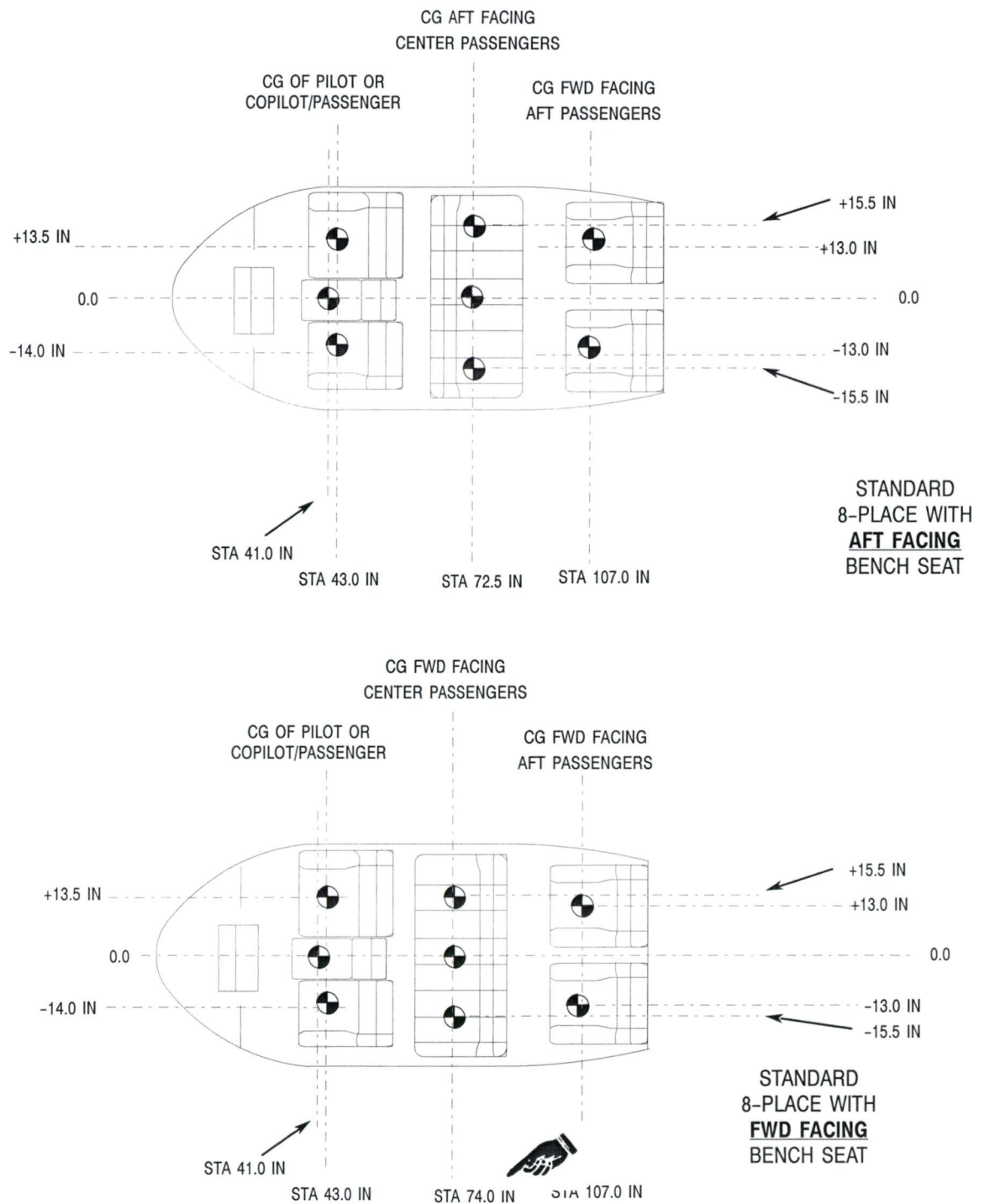
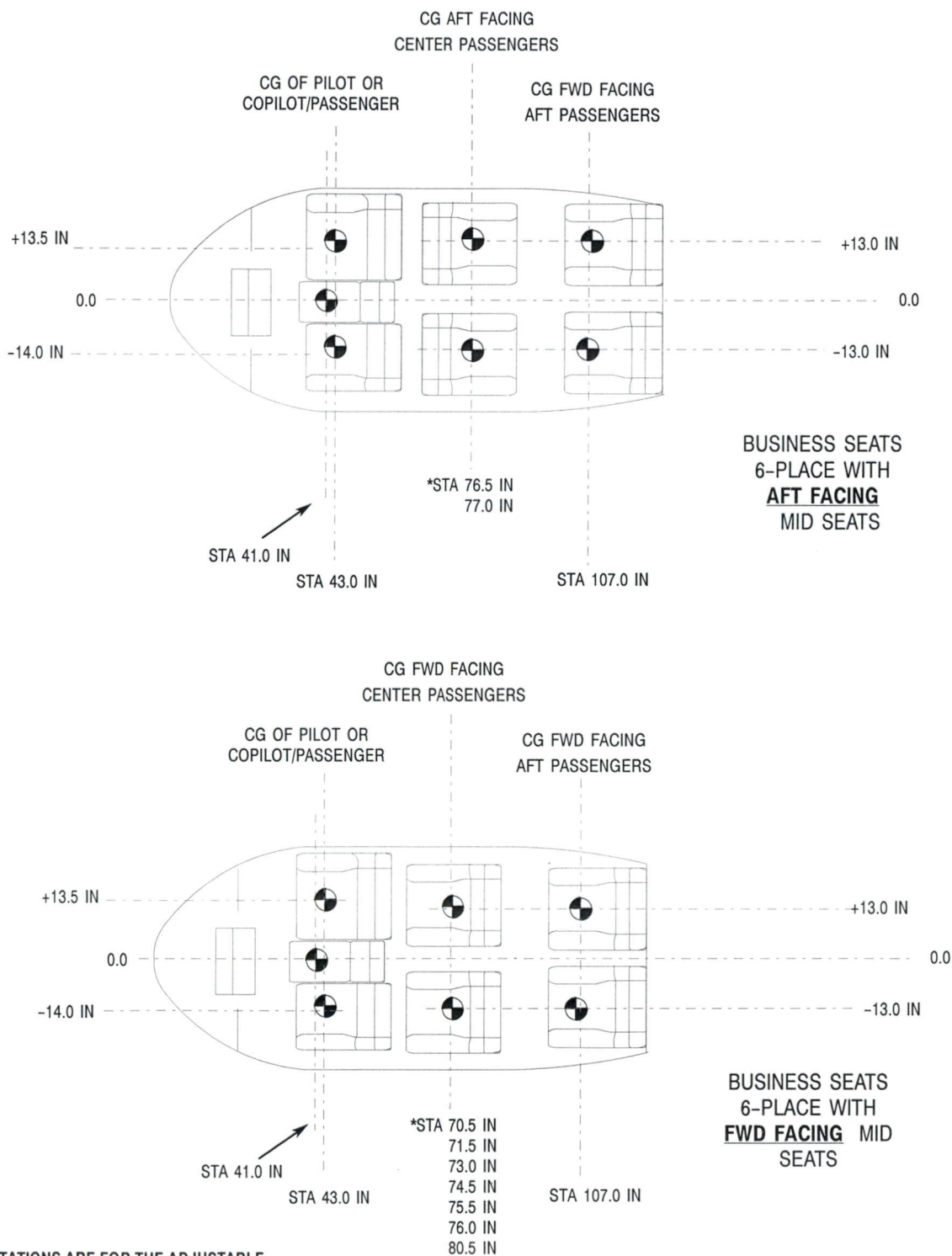


Figure 6-2. Crew/Passenger Stations - Standard Seating



*THESE STATIONS ARE FOR THE ADJUSTABLE
(FORE AND AFT) MID-SEAT LOCATIONS.

F60-023-2

Figure 6-2A. Crew/Passenger Stations - Business Seats

AIRCRAFT ACTUAL WEIGHT

Model 600N Serial No. _____ Registration No. _____ Date 4/21/97Weighed by J Doe Witnessed by R Doe

EMPTY FULL

FUEL

☒

OIL, ENGINE

☒

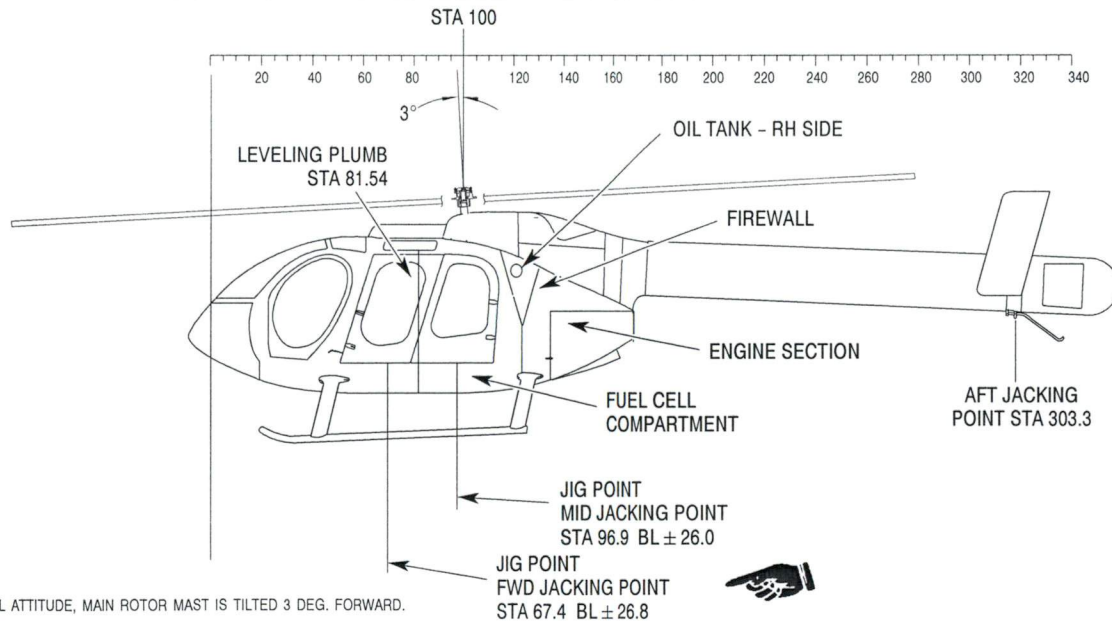
OIL, MAIN GEARBOX

☒

OIL, FAN GEARBOX

☒

WEIGHING POINT	FIRST READING LBS.	SECOND READING LBS.	THIRD READING LBS.	AVG. SCALE READING LBS.
Left Main	1056.2	1056.0	1057.0	1056.4
Right Main	1036.6	1035.6	1033.6	1035.3
Tail	86.8	87.0	87.0	86.9
TOTAL (AS WEIGHED)				2178.6



F60-024A

WEIGHING POINT	AVG. SCALE READING LBS.	TARE OR CALIB. CORR LBS.	NET WEIGHT LBS.	H ARM IN.	L ARM IN.	H MOMENT IN. LB.	L MOMENT IN. LB.
Left Main	1056.4	0	1056.4	96.9	-26.0	102355	-27414
Right Main	1035.3	0	1035.3	96.9	26.0	100307	26865
Tail	86.9	0	86.9	303.3	0.0	26370	0
TOTAL (AS WEIGHED)			2178.6	105.1	-0.3	229032	-548
Less: Surplus Weight (See Table 1)			-7.0	99.5	0.0	-692	0
Plus: Missing Required Equipment (See Table 1)			28.9	85.8	-0.5	2484	-13
TOTAL - BASIC WEIGHT			2200.6	104.9	-0.3	230824	-561

Figure 6-3. Sample Weight and Balance Report (Sheet 1 of 2)

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MODEL 600N SERIAL NO. _____ REGISTRATION NO. _____ DATE 4/21/97

EXAMPLES OF FORWARD, AFT, AND LATERAL LOADING

EXAMPLE 1, FORWARD	WEIGHT (LBS.)	LONG. ARM (IN.)	LONG. MOMENT (IN.-LB.)
BASIC WEIGHT	2200.6	104.9	230824
PILOT	170.0	43.0	7310
PASSENGER - COCKPIT RH (COPILOT)	170.0	43.0	7310
PASSENGER - COCKPIT CENTER	170.0	41.0	6970
PASSENGER - CABIN (MID SEAT FACING FWD)	170.0	74.0	12580
PASSENGER - CABIN (MID SEAT FACING FWD)	170.0	74.0	12580
PASSENGER - CABIN (MID SEAT FACING FWD)	170.0	74.0	12580
NOMINAL FUEL	582.0	82.1	47782
GROSS WEIGHT (NOMINAL FUEL) - FWD C.G.	3802.6	88.9	337936

APPROVED FWD C.G. LIMIT FOR EXAMPLE 1 GROSS WEIGHT 91.0 INCHES.

NOTE: FWD C.G. LIMIT EXCEEDED - CORRECTIVE ACTION REQUIRED

EXAMPLE 2, AFT	WEIGHT (LBS.)	LONG. ARM (IN.)	LONG. MOMENT (IN.-LB.)
BASIC WEIGHT	2200.6	104.9	230824
PILOT	170.0	43.0	7310
PASSENGER - AFT L.H.	170.0	107.0	18190
PASSENGER - AFT R.H.	170.0	107.0	18190
BAGGAGE - UNDER AFT SEAT	50.0	110.0	5250
GROSS WEIGHT (ZERO FUEL) - AFT C.G.	2760.6	101.4	280014

APPROVED AFT C.G. LIMIT FOR EXAMPLE 2 GROSS WEIGHT 100.0 INCHES.

NOTE: AFT C.G. LIMIT EXCEEDED - CORRECTIVE ACTION REQUIRED.

EXAMPLE 3, LATERAL	WEIGHT (LBS.)	LATRL. ARM (IN.)	LATRL. MOMENT (IN.-LB.)
BASIC WEIGHT	2200.6	-0.3	-660
PILOT	170.0	-14.0	-2380
PASSENGER - MID L.H.	170.0	-15.5	-2635
PASSENGER - AFT L.H.	170.0	-13.0	-2210
GROSS WEIGHT(ZERO FUEL) - LATERAL C.G.	2710.6	- 2.9	-7885

APPROVED LATERAL C.G. LIMIT FOR EXAMPLE 3 GROSS WEIGHT ± 5.0 INCHES.

Figure 6-3. Sample Weight and Balance Report (Sheet 2 of 2)



TABLE 1
Surplus and Missing Equipment

Model 600N Serial No. _____ Registration No. △ Date 4/21/97

[illegible]

Figure 6–4. Sample Surplus and Missing Items

Figure 6-5. Sample Weight and Balance Record

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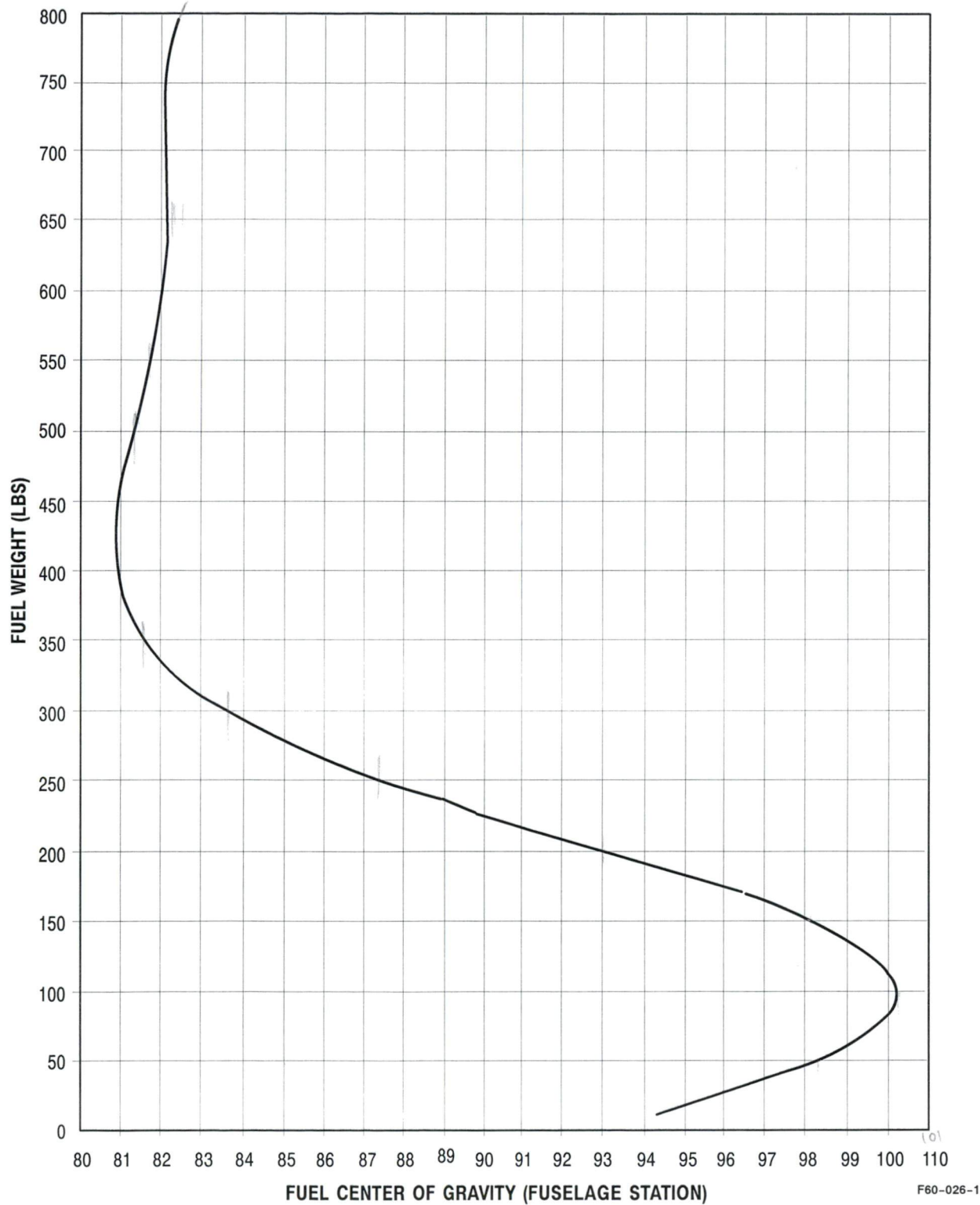


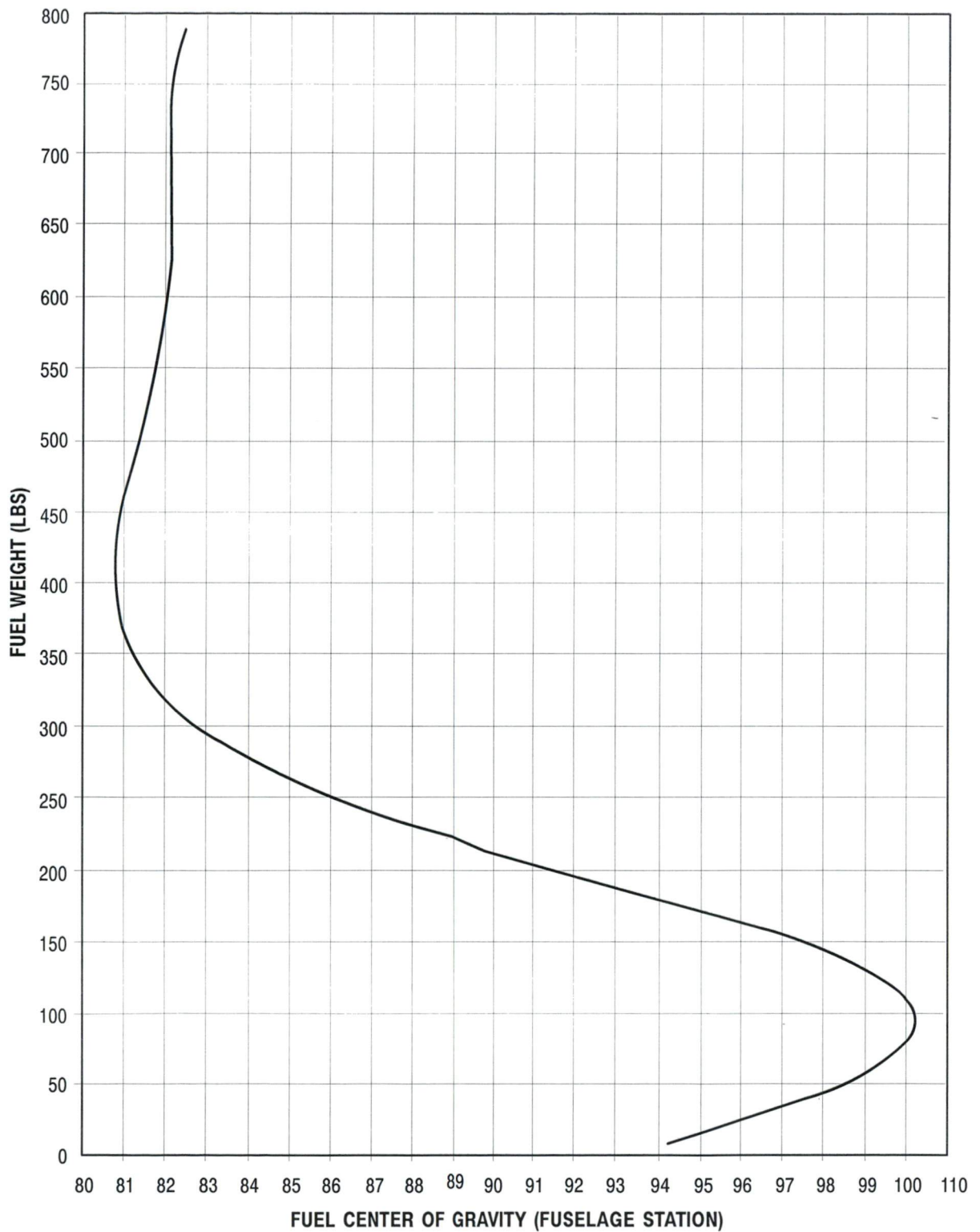
Figure 6-6. Fuel Station (JET A at 6.8 Pounds per Gallon) (Sheet 1 of 2)



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F60-026-2

Figure 6-6. Fuel Station (JET B at 6.5 Pounds per Gallon)(Sheet 2 of 2)



Table 6-2. Fuel Loading Table - Jet A (6.8 lb/gal)

VOLUME GALLONS	WEIGHT POUNDS	FUSELAGE STATION (IN)	MOMENT IN-LBS
5	34	96.9	3295
10	68	99.5	6766
15	102	100.2	10225
20	136	99.1	13472
25	170	96.2	16350
30	204	92.2	18810
35	238	88.5	21060
40	272	85.4	23223
45	306	83.2	25473
50	340	81.9	27841
55	374	81.1	30342
60	408	80.8	32971
65	442	80.8	35714
70	476	81.0	38546
75	510	81.3	41439
80	544	81.5	44362
85	578	81.8	47284
90	612	82.0	50181
95	646	82.1	53038
100	680	82.1	55851
105	714	82.1	58631
110	748	82.1	61409
115	782	82.1	64239
120	816	82.4	67199



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Table 6-3. Fuel Loading Table – Jet B (6.5 lb/gal)

VOLUME GALLONS	WEIGHT POUNDS	FUSELAGE STATION (IN)	MOMENT IN-LBS
5	33	96.9	3150
10	65	99.5	6467
15	98	100.2	9774
20	130	99.1	12877
25	163	96.2	15629
30	195	92.2	17980
35	228	88.5	20131
40	260	85.4	22199
45	293	83.2	24349
50	325	81.9	26613
55	358	81.1	29003
60	390	80.8	31516
65	423	80.8	34138
70	455	81.0	36846
75	488	81.3	39611
80	520	81.5	42404
85	553	81.8	45198
90	585	82.0	47967
95	618	82.1	50698
100	650	82.1	53387
105	683	82.1	56044
110	715	82.1	58700
115	748	82.1	61405
120	780	82.4	64234

LIFTING AND JACKING MAINTENANCE PRACTICES

1. Component Weights for Hoisting

The maximum weights for large components that may require hoisting are listed (Ref. Tables 201, thru 204).

Table 201. Approximate Maximum Hoisting
 Weights of Components - **369D/E**

Item	Wgt Lb/kg
Tailboom	18/8
Main rotor hub	85/39
Main transmission (wet) (369D25100)	105/48
Main transmission (wet) (369F5100)	140/64
Engine (built-up) C20B	192/87
Engine (built-up) C20R/2	207/94
Helicopter (less main rotor hub, swashplate, scissors and rotor blades)	1153/523
Helicopter (complete)	1361/618

Table 202. Approximate Maximum Hoisting
 Weights of Components - **369FF**

Item	Wgt Lb/kg
Tailboom	23/10
Main rotor hub	92/42
Main transmission (wet) (369D25100)	105/48
Main transmission (wet) (369F5100)	140/64
Engine (built-up)	271/123
Helicopter (less main rotor hub, swashplate, scissors and rotor blades)	1369/622
Helicopter (complete)	1589/721

Table 203. Approximate Maximum Hoisting
 Weights of Components - **500N**

Item	Wgt Lb/kg
Tailboom (w/o empennage, thruster)	35/16
Main rotor hub	92/42
Main transmission (wet) (369D25100)	105/48
Main transmission (wet) (369F5100)	140/64
Engine (built-up)	207/94
Helicopter (less main rotor hub, swashplate, scissors and rotor blades)	1314/597
Helicopter (complete)	1542/700

Table 204. Approximate Maximum
 Hoisting Weights of Components - **600N**

Item	Wgt Lb/kg
Tailboom (w/o empennage, thruster)	55/25
Main rotor hub (with dampers, pins)	107/49
Main transmission (wet)	140/64
Engine (built-up) C47	292/133
Helicopter (less main rotor hub, swashplate, scissors and rotor blades)	1830/830
Helicopter (complete)	2100/953



Use hoist with minimum 3500 pound (1589 kg) capacity when hoisting complete helicopter. Use hoisting equipment with minimum 20% overrate to hoist heavier components of helicopter (Ref. Table 201 thru 204 for approximate weights).

2. Helicopter Hoisting

Special Tools (Ref. Section 91-00-00)	
Item	Nomenclature
ST201	Hoisting adapter
N/A	Cable or Rope

- Remove dome fairing from main rotor hub and install hoisting adapter (ST201) on hub so that hoisting eyebolts fit into slots on hoisting adapter (Ref. Figure 201).
- Install quick release pins.
- Attach cable from overhead hoist to adapter eye.
- Secure a line to tailboom. Have assistant hold line to keep helicopter from swinging.
- Hoist slowly and smoothly to maintain steady lifting force.

3. Helicopter Sling Lifting

Follow below procedures for sling lifting the helicopter.

Special Tools (Ref. Section 91-00-00)	
Item	Nomenclature
ST201	Hoisting adapter

CAUTION

Sling-lift helicopter only when other means of recovery are not available. Ensure recovery helicopter has adequate capabilities, performance and fuel to accomplish sling-lift recovery. Ensure recovery crew has experience level to assure optimum performance at assigned positions. Do not attempt lifting or lowering during adverse wind or weather conditions.

4. Helicopter Preparations

Prepare helicopter to be lifted before attempting lift to avoid damage or loss of equipment during flight.

- Remove dome fairing from main rotor hub (369D/E/FF - 500N only) (Ref. Sec. 62-20-00).
- Remove main rotor blades (Ref. Sec. 62-10-00).
- Replace and secure blade damper bolts and attaching pins.
- Tape elastomeric damper to pitch housing.
- Install hoisting adapter (ST201).

- Attach lifting straps or swivel-equipped cable slings that clear lead by 10 feet to hoisting adapter.
- Secure tail rotor hub to Station 284 bellcrank with strap or rope (369D/E/FF only).
- Position one person to support tail of helicopter.
- Position one person to accomplish hookup to recovery helicopter.
- Position one person in view of recovery helicopter to act as ground guide during hookup.

5. Helicopter Lifting**WARNING**

Tail of helicopter may come down sharply if helicopter is lifted abruptly.

CAUTION

Avoid dragging helicopter during lift before ground clearance is obtained. Dragging helicopter may cause extensive damage.

- Carefully lift helicopter. Ensure that person at tail of helicopter is familiar with above warning.
- Transport recovery crew and removed equipment to landing site before recovery helicopter with lifted helicopter arrives.

6. Helicopter Landing

- Indicate wind direction with smoke cannister.
- Ground guide recovery helicopter to hover into wind before lowering begins.

CAUTION

Do not attempt lowering if helicopter is spinning.

- Lower helicopter.
- Restrain and support tail of helicopter as it contacts ground.

CAUTION

Ground guide must signal recovery helicopter to move to one side before dropping sling or helicopter window damage may occur.

- Signal recovery helicopter to drop sling.
- Remove sling and hoist adapter.
- Inspect recovered helicopter to determine condition.

EFFECTIVITY: ALL

- h. Inspect main rotor blades prior to installation for damage caused during removal and transportation (Ref. Sec. 62-10).

7. **Helicopter Jacking**

(Ref. Figure 201) Provisions for jacking helicopter are provided by two (369D/E/FF - 500N) or four (600N) forward (side) jacking point fittings and an aft jacking pad. The aft jack pad locations differ for the 369D/E/FF and the 500/600N helicopters.

Special Tools
(Ref. Section 91-00-00)

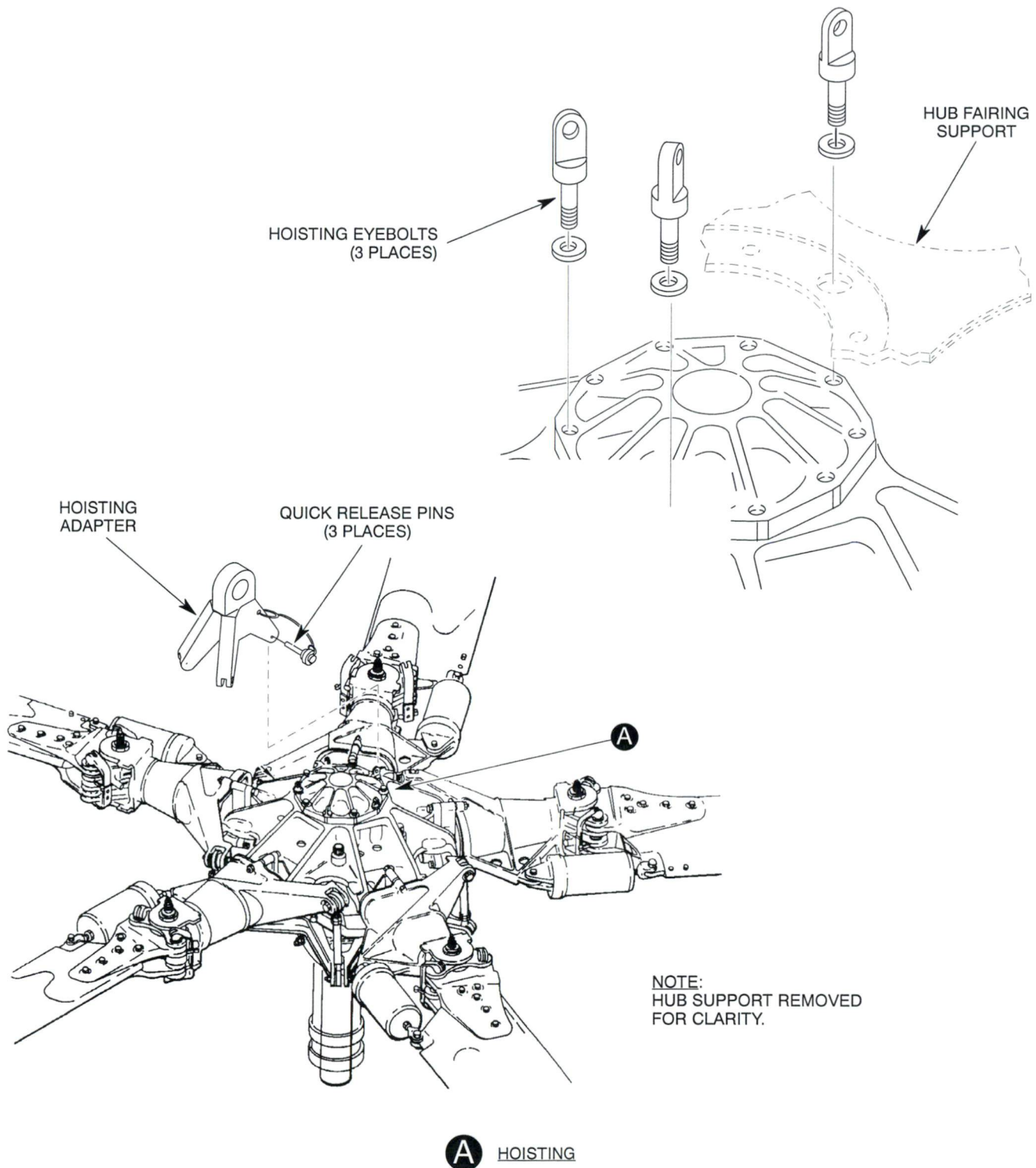
<u>Item</u>	<u>Nomenclature</u>
ST202	Jack fittings
ST203	Hydraulic jack - 1-5 ton
ST204	Hydraulic jack - 80-inch leg

- a. Install jack fittings (ST202) in fuselage jacking points. Secure jack fittings with locking pins located in fuel cell access doors.
- b. Place suitable jacks (ST203 or ST204) under jack fittings and AFT jacking pad.

NOTE

If helicopter is jacked from one side only, in next step, a cushioned saddle-type support should be placed under tailboom at aft jacking pad location for extra stability.

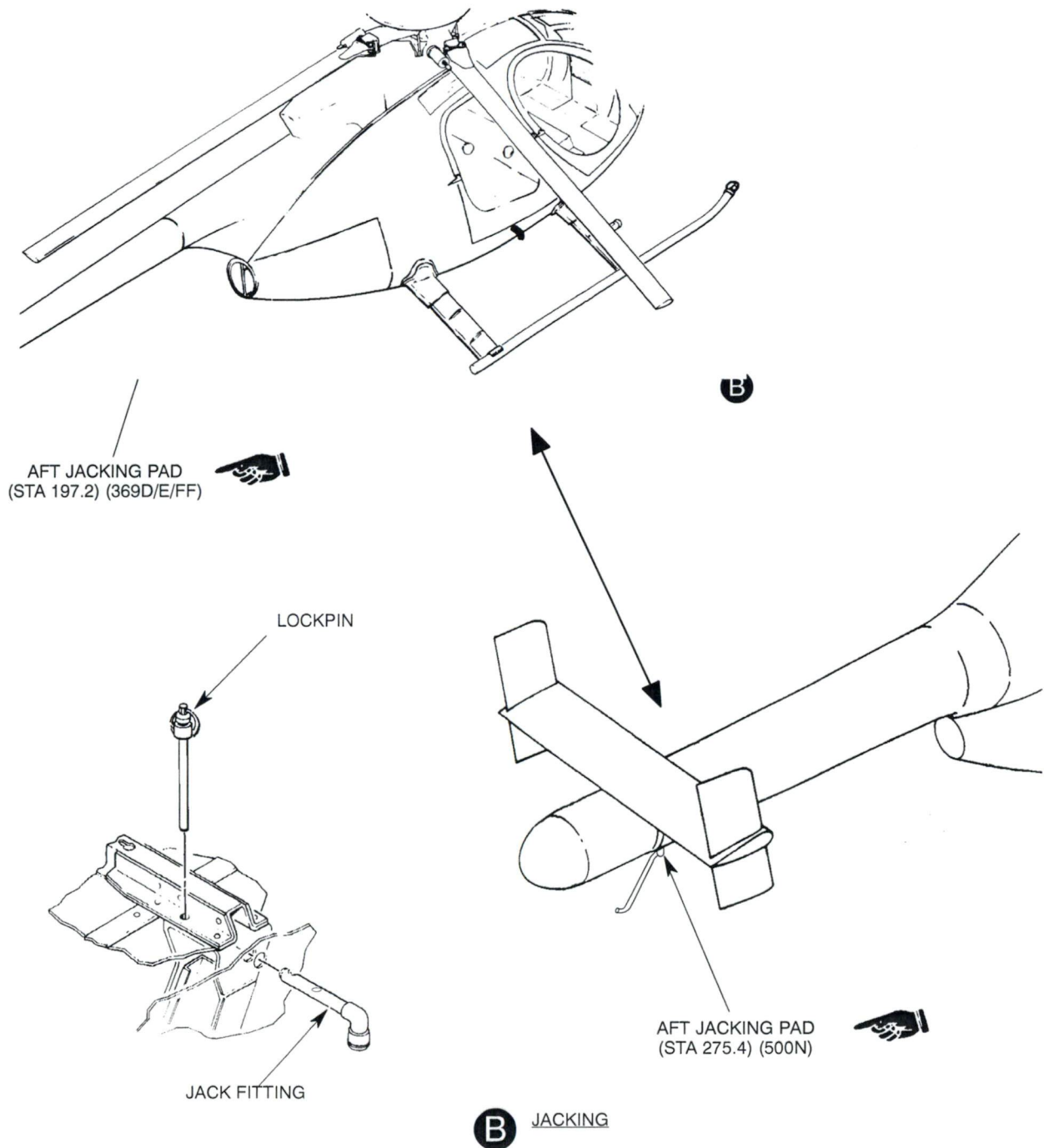
- c. Raise helicopter to desired height.



G07-0001-1

Figure 201. Hoisting and Jacking Helicopter (Sheet 1 of 3)

EFFECTIVITY: ALL



G07-0001-2A

Figure 201. Hoisting and Jacking Helicopter (Sheet 2 of 3)

EFFECTIVITY: ALL

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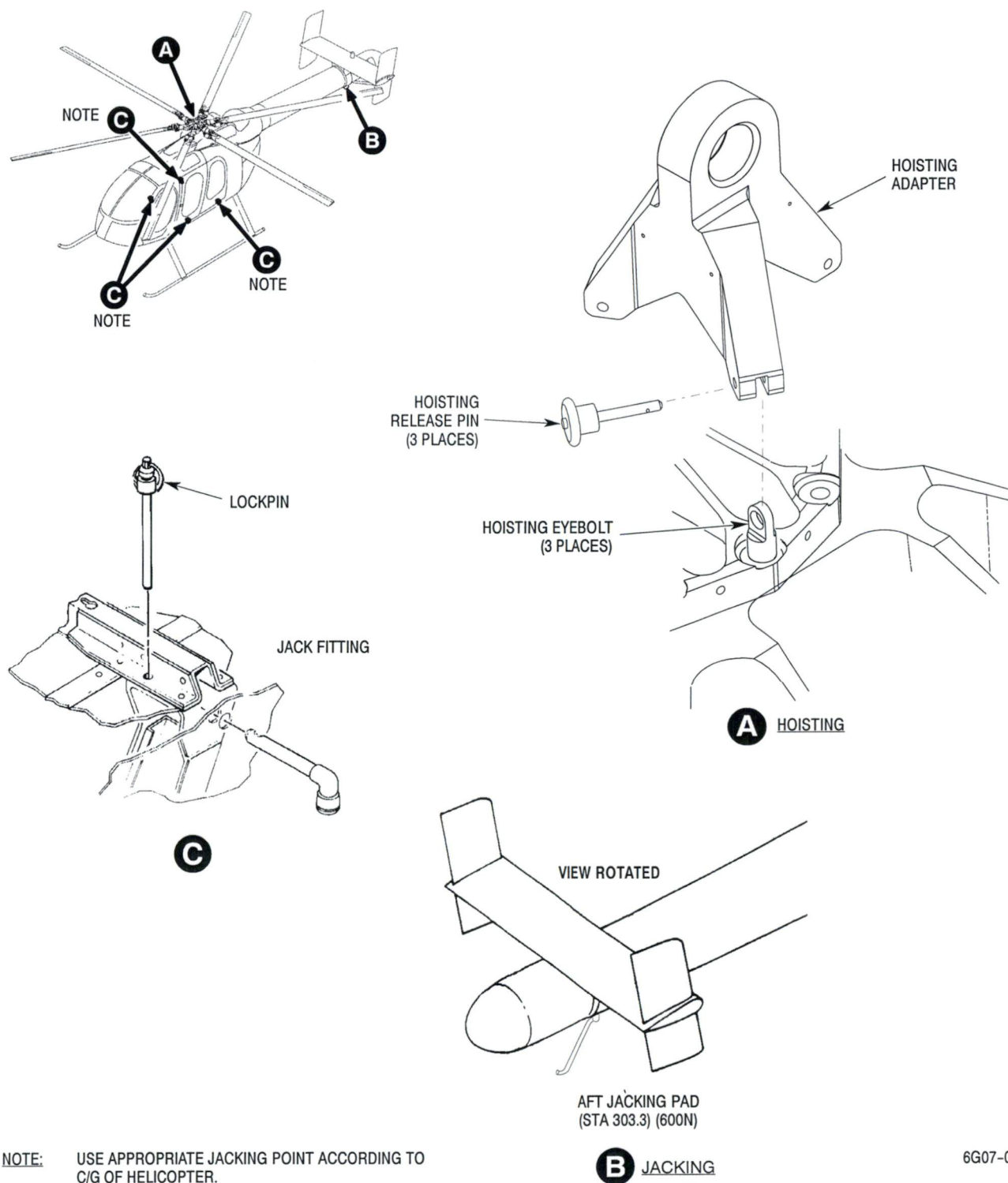
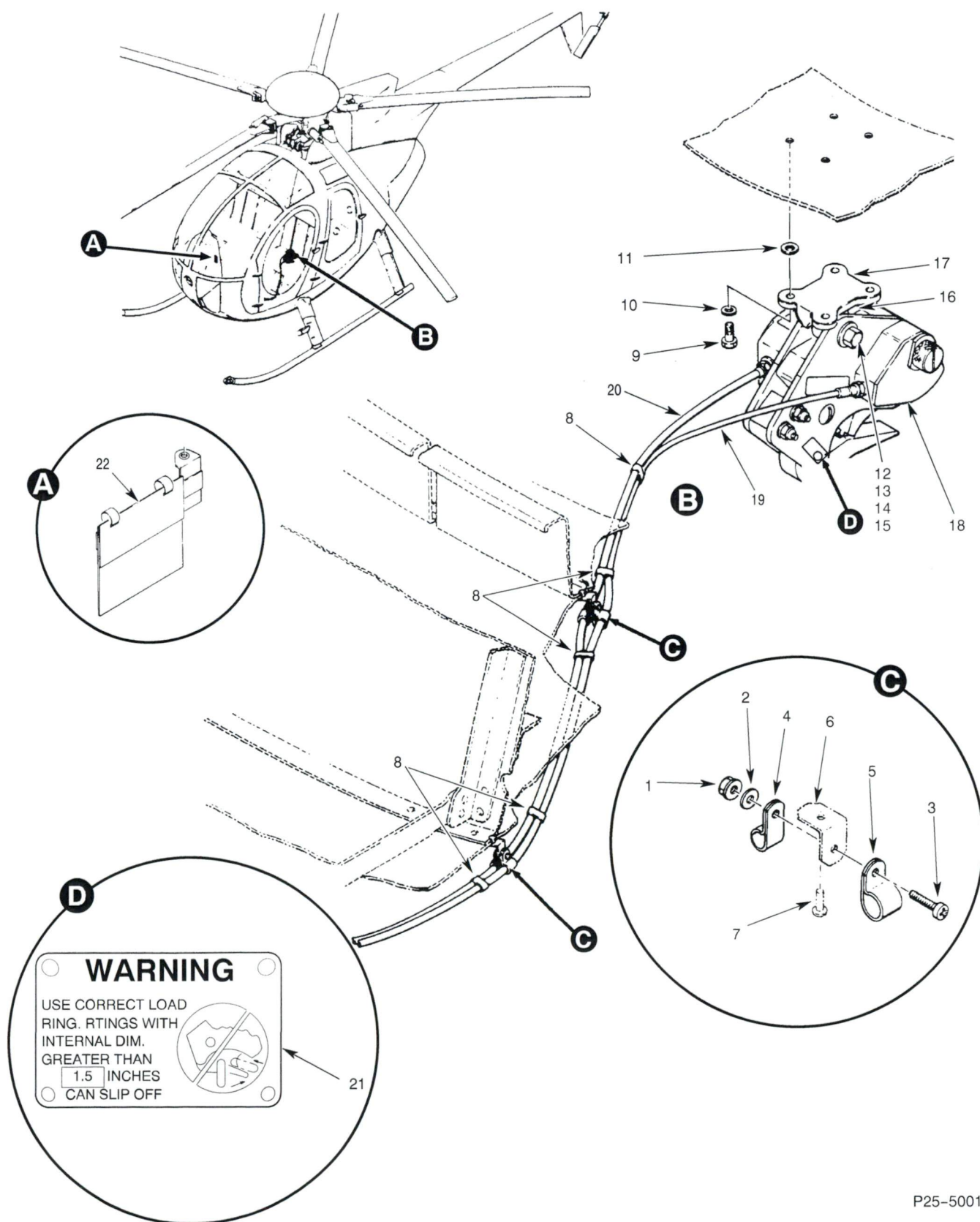


Figure 201. Hoisting and Jacking Helicopter (Sheet 3 of 3)

EFFECTIVITY: ALL



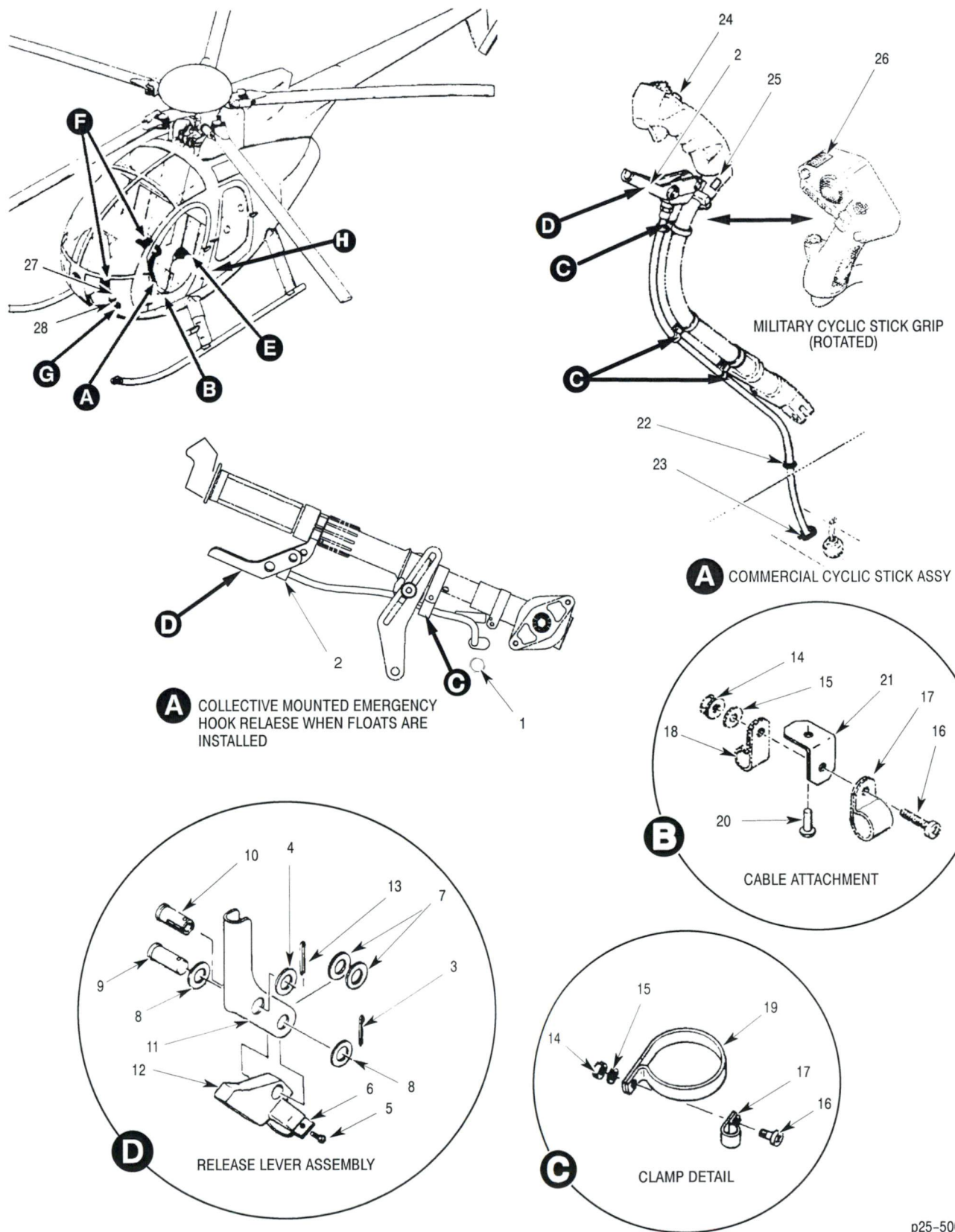
P25-5001C

Figure 1. Cargo Hook Installation

Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
1		369H90072-525	• Cargo Hook Installation 600N Model	1		6XX 000003-SUBS
1		369H90072-523	• Cargo Hook Installation 500N Model	1		N 000001-SUBS
1		369H90072-521	• Cargo Hook Installation E, FF Model Military	1		ME 000384-SUBS MFF 000076-SUBS
1		369H90072-519	• Cargo Hook Installation E, FF, 500N, 530N Model	1		E 000384-SUBS FF 000076-SUBS N 000001-SUBS N3 000001-SUBS
1		369H90072-517	• Cargo Hook Installation Not Procurable	1		E 000001-SUBS
1		369H90072-515	• Cargo Hook Installation Not Procurable	1		D 000001-SUBS
1		369H90072-513	• Cargo Hook Installation FF Model Military	1		MFF 000001-SUBS
1		369H90072-511	• Cargo Hook Installation FF Model	1		FF 000001-SUBS
1		369H90072-509	• Cargo Hook Installation E Model Military	1		ME 000001-SUBS
1		369H90072-507	• Cargo Hook Installation D Model With Late Slim Line Console	1		D 001150-001150 D 001185-001204
1		369H90072-505	• Cargo Hook Installation E Model With Tee Console	1		E 000001-000383 FF 000001-000075
1		369H90072-503	• Cargo Hook Installation D Model Military	1		MD 000003-001346
1		369H90072-501	• Cargo Hook Installation D Model	1		D 000003-001184
1	1	MS21042-3	• • Nut, Self Locking	5		
1	2	AN960KD10L	• • Washer, Flat	2		
1	3	NAS603-10	• • Screw	2		
1	4	MS25281-R3	• • Clamp	2		
1	5	MS25281-R4	• • Clamp	2		
1	6	369H90072-29	• • Clip	2		
1	7	NAS1738B4-2	• • Rivet-Blind, Protruding Head, Mech Locked Spindle	2		
1	8	MS17821-4-9	• • Strap	5		
1	9	NAS1304-6	• • Bolt, Shear-Hexagon Head Use On All Except -525 Instl	4		
1	9	NAS1304-10	• • Bolt, Shear-Hexagon Head Use On 369H90072-525 Instl	4		
1	10	AN960-416L	• • Washer, Flat	4		
1	11	AN960KD416	• • Washer, Flat	4		
1	12	MS24665-15	• • Pin, Cotter	1		
1	13	AN320-5	• • Nut	1		
1	14	AN960PD516	• • Washer	1		
1	15	AN25-23	• • Bolt	1		
1	16	13410-1	• • Swivel Assy	1		
1	17	12624-1	• • Pad, Mount	1		
1	18	369H92105-505	• • Hook Assy Use On 369H90072-525 Instl 3000 Pound Capacity	1		

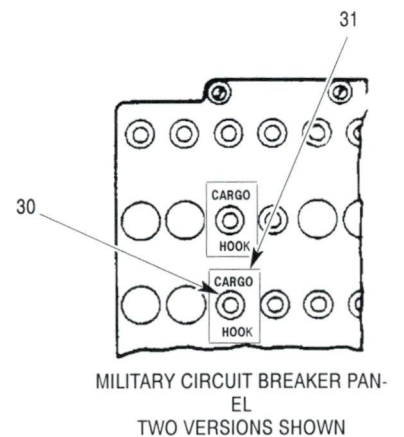
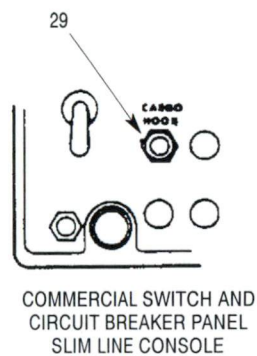
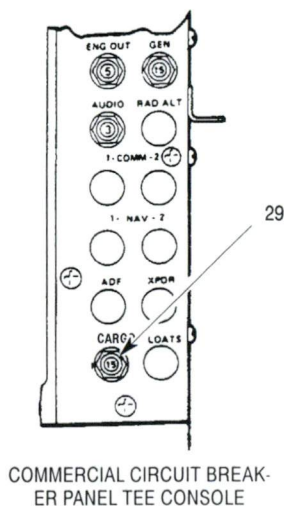
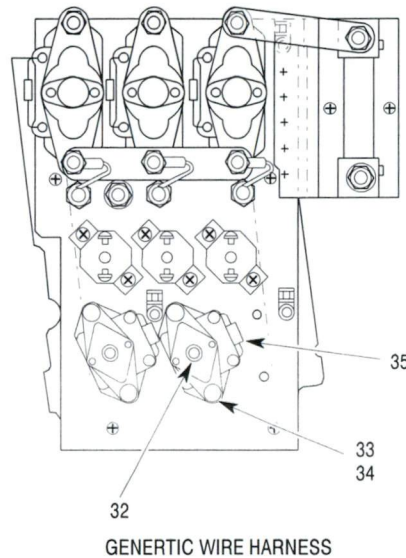
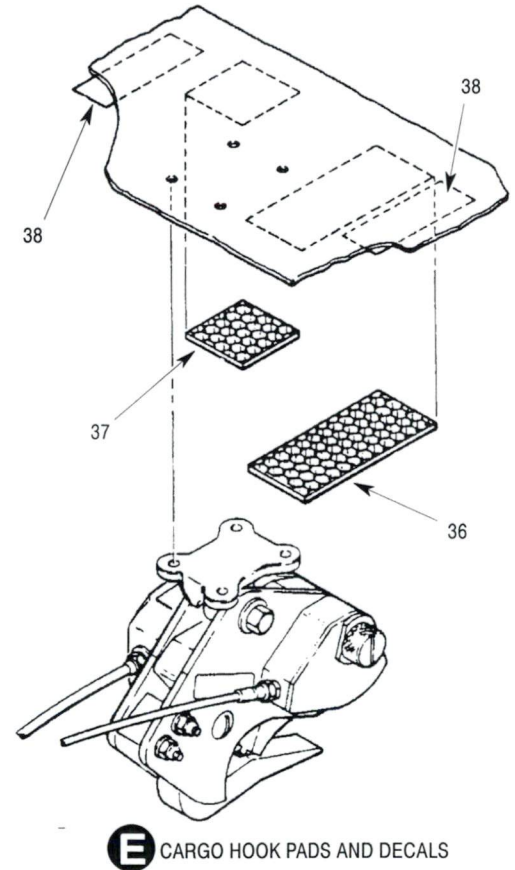
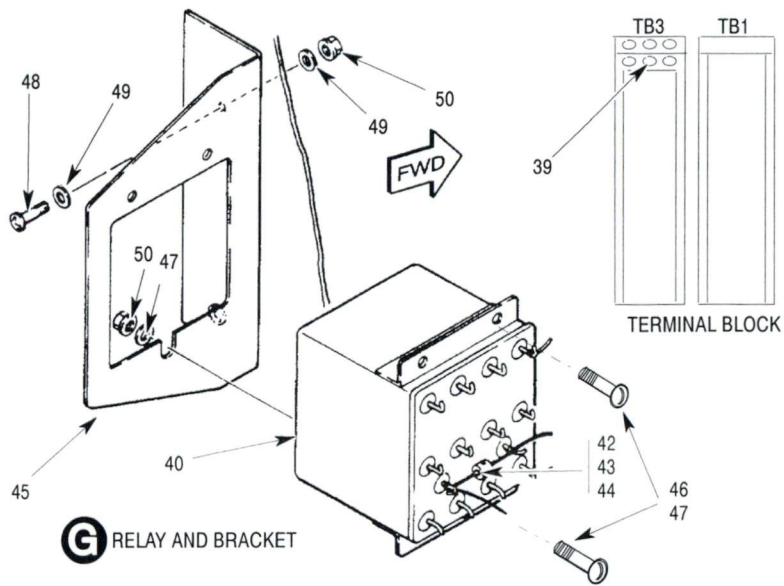
Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
1	18	369H92105-503	• • Hook Assy Use On 369H90072-525 Instl 3000 Pounds Capacity	1		
1	18	369H92105-501	• • Hook Assy	1		
1	19	14323-7	• • Cable Component Of 369H92105-503 And -505	1		
1	19	14323-2	• • Cable Component Of 369H92105-501	1		
1	20	14631-1	• • Cable, Wire Harness Component Of 369H92105-503 And -505	1		
1	20	13632-1	• • Cable, Wire Harness Component Of 369H92105-501	1		
1	21	13830-1	• • Warning Plate	1		
1	22	369D292588	• • Vne Card Use On 369H90072-511 And -513 Instl	1		
1	22	369D292583-501	• • Vne Card Use On 369D, E FF 369H90072-505 And 369H90072-509 Instl	1		
1	22	369D292571-35	• • Vne Card Use On 500N Only 369H90072-523 Instl	1		
1	22	369D292571-33	• • Vne Card Use On 500N Only 369H90072-523 Instl	1		
1	22	369D292571-23	• • Vne Card Use On 369D, E FF Model 369H90072-505 And 369H90072-509 Instl	1		
1	22	369D292571-21	• • Vne Card Use On 369D, E FF Model 369H90072-505 And 369H90072-509 Instl	1		
N	1	23	369H90072-81	• • Cargo Hook Provisions Use On 369H90072-525 Instl See Fig 2 For Further BKDN	1	
N	1	23	369H90072-71	• • Cargo Hook Provisions Use On 369H90072-521 Instl See Fig 2 For Further BKDN	1	
N	1	23	369H90072-61	• • Cargo Hook Provisions Use On 369H90072-519 And -523 Instl See Fig 2 For Further BKDN	1	
N	1	23	369H90072-51	• • Cargo Hook Provisions Use On 369H90072-509 And -513 Instl See Fig 2 For Further BKDN	1	

Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
N	1	23	369H90072-41	1		
			• • Cargo Hook Provisions Use On 369H90072-505, -511, -517 Instl See Fig 2 For Further BKDN			
N	1	23	369H90072-31	1		
			• • Cargo Hook Provisions Use On 369H90072-501, -503, -507, -515 Instl See Fig 2 For Further BKDN			



p25-5002-1B

Figure 2. Cargo Hook Installation (Sheet 1 of 2)



p25-5002-2B

Figure 2: Cargo Hook Installation (Sheet 2 of 2)

I L L	Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
	2		369H90072	• Cargo Hook Provisions	REF		D 000001-SUBS E 000001-SUBS FF 000001-SUBS N 000001-SUBS 6XX 000003-SUBS
	2	1	HS4248-C56	• • Plug Button Use On 369H90072-71 Cargo Hook Assy 369H90072-521 Instl	1		
	2	2	600N92410-1	• • Lever Assy, Collective Release	1		6XX
	2	2	369H92410	• • Release Lever Assy	1		
	2	3	MS24665-153	• • • Pin, Cotter	1		
	2	4	AN960KD716	• • • Washer, Flat	1		
	2	5	AN503-10-12	• • • Screw	2		
	2	6	81-B	• • • Clamp	1		
	2	7	5612-46-5	• • • Washer	2		
	2	8	NAS1149DO616K	• • • Washer	2		6XX
	2	8	AN960KD616L	• • • Washer, Flat	2		
	2	9	MS20392-5C23	• • • Pin	1		
	2	10	81-6	• • • Bushing	1		6XX
	2	10	369H92631	• • • Bushing	1		
	2	11	369H92410-3	• • • Lever	1		
	2	12	600N92411-1	• • • Bracket Assy	1		6XX
	2	12	369H92411	• • • Bracket	1		
	2	13	MS24665-300	• • • Pin, Cotter (Split)	1		
	2	14	MS21042-3	• • Nut, Self Locking	3		
	2	15	AN960KD10L	• • Washer, Flat	5		
	2	16	NAS603-10	• • Screw	3		
	2	17	MS25281-R4	• • Clamp	3		
	2	18	MS25281-R3	• • Clamp	2		
	2	19	MS25281-R16	• • Clamp	3		
	2	20	NAS1738B4-2	• • Rivet-Blind, Protruding Head, Mech Locked Spindle	2		
	2	21	369H90017-29	• • Clip	2		
	2	22	MS35489-9S	• • Grommet	1		
	2	23	MS35489-19S	• • Grommet	1		
	2	24	PM21495	• • Switch Use On Military Model Only (S-4)	AR		
	2	24	21495	• • Switch	1		
	2	25	369H90072-13	• • Decal, (Emergency Release)	1		
	2	26	369H90072-45	• • Decal, (Hook Release)	1		
	2	27	A4DM14-1	• • Modular Use On Military Model Only	1		
	2	28	AME14-1	• • Cover, Top Use On Military Model Only	1		
	2	29	2TC13-15	• • Breaker, Circuit 15A Use On Commercial Model Only Not For Military Model	1		
	2	29	2TC12-15	• • Breaker, Circuit 15A	1		

I L L	Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
2	30		MS25244-15	• • Circuit Breaker Use On Military Model Only Not For Commercial Model	1		
2	31		369H90072-25	• • Decal, (Cargo Hook) Use On 369H90072-51, And -71, Cargo Hook Assy	1		
2	32		MS24166-D1	• • Relay, (K201) Generic Wire Harness	1		
2	33		NAS603-8P	• • Screw, Machine-Aircraft, Pan Head Generic Wire Harness	2		
2	34		AN960KD10LL	• • Washer, Flat Generic Wire Harness	2		
2	35		369D24260-11	• • Diode Assenbly Generic Wire Harness	1		
2	36		369H90072-7	• • Pad Generic Wire Harness	1		
2	37		369H90072-5	• • Pad Generic Wire Harness	1		
2	38		369H90072-53	• • Decal, (3000 Lbs) Use On 369H90072-525 Instl	1		
2	38		369H90072-19	• • Decal, (2000 Lbs) Use On 369H90072-523 Instal	2		
2	39		HS4737-1602	• • Module Use On Military Model Only	1		
2	40		369H90072-21	• • Relay Assy Generic Wire Harness	1		D 000001-SUBS E 00000-000383 FF 000001-000075
2	41		IN5401	• • • Diode (Cr3) Generic Wire Harness	1		
2	41		IN4003	• • • Diode (Cr3) Generic Wire Harness	1		
2	42		MS27400-1	• • • Relay (K104) Generic Wire Harness	X		
2	42		MS27255-4	• • • Relay (K104) Generic Wire Harness	1		
2	43		AYH14-H1	• • • Contact Pin Generic Wire Harness	2		
2	44		MPCM20M-H2	• • • Contact Pin Generic Wire Harness	1		
2	45		369H90065-23	• • Bracket Generic Wire Harness	1		
2	46		NAS601-5	• • Screw Generic Wire Harness	2		
2	47		NAS620C6L	• • Washer, Flat-Reduced Outside Diameter	2		
2	48		NAS601-7	• • Screw Generic Wire Harness	2		
2	49		HS306-318	• • Washer Generic Wire Harness	2		
2	50		MS21043-06	• • Nut Generic Wire Harness	5		

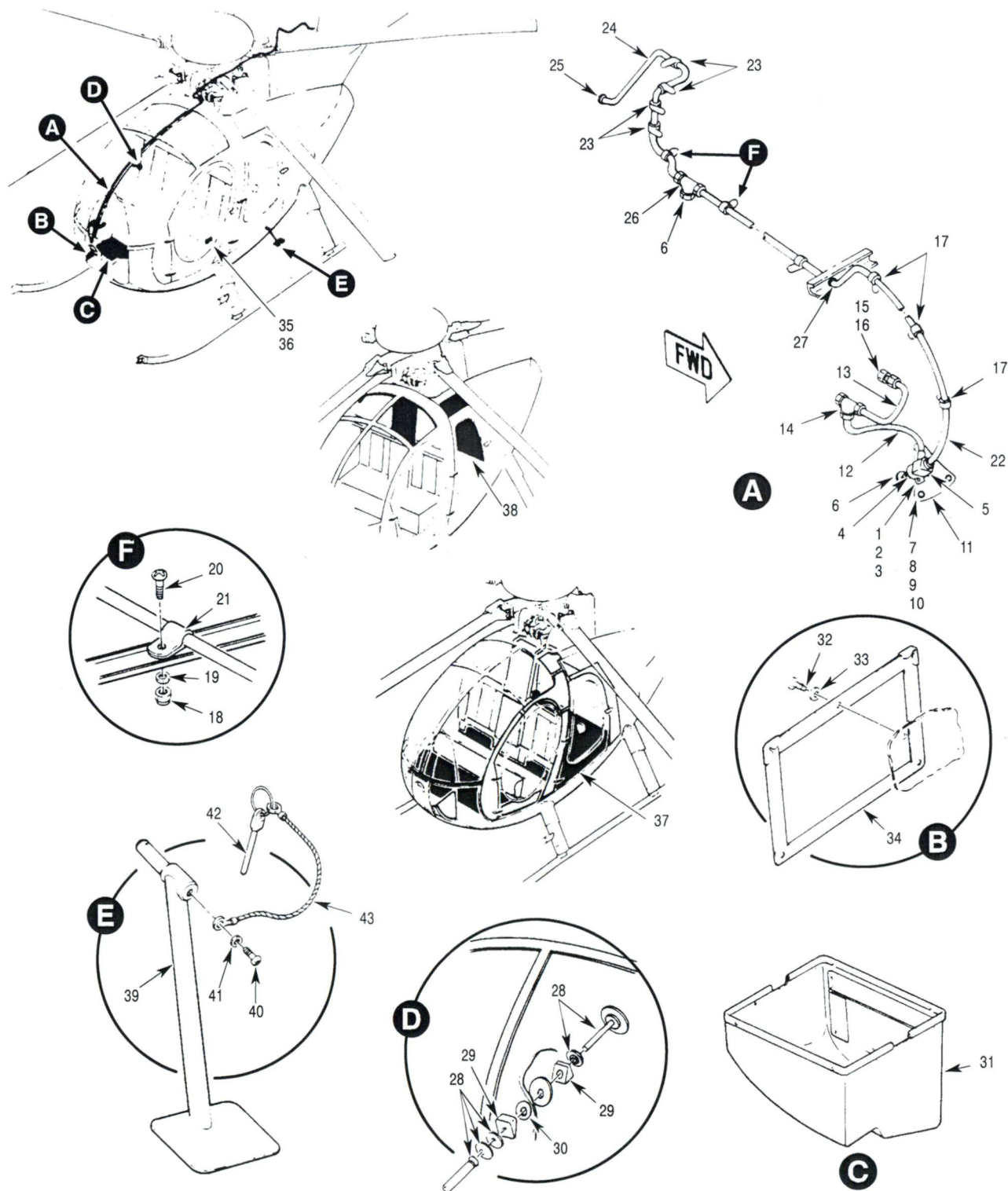


Figure 1. Equipment Installation

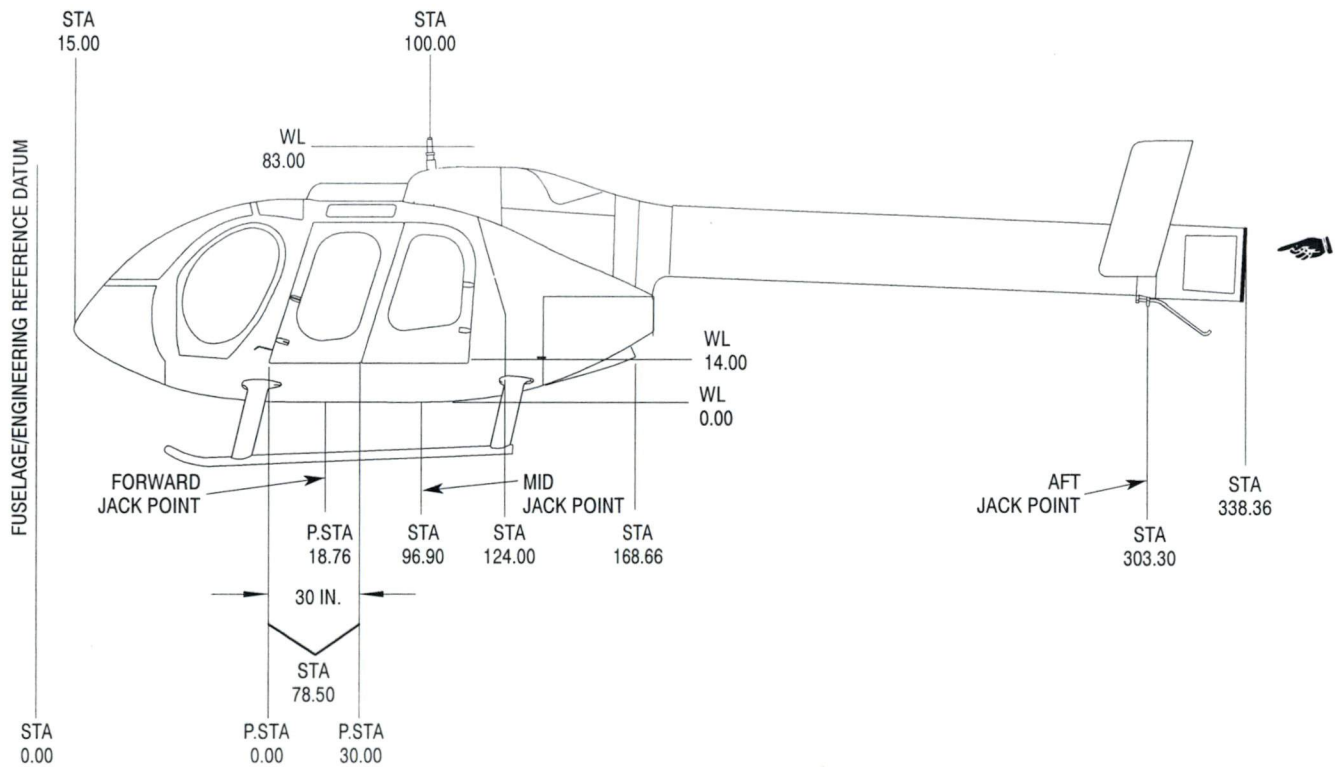
P25-0001

I L L	Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
	1		369D296500-701	• Equipment Instl Not Procurable See Fig 2, 3 And 25-15-90 For Further BKDN	REF		MD 000001-SUBS
	1		369D26521-527	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-525	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-523	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-521	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-519	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-517	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-515	• Equipment Instl Not Procurable See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-513	• Equipment Instl Not Procurable Intrch With 369D26521-527 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-511	• Equipment Instl Not Procurable Intrch With 369D26521-525 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-509	• Equipment Instl Not Procurable Intrch With 369D26521-523 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-507	• Equipment Instl Not Procurable Intrch With 369D26521-521 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-505	• Equipment Instl Not Procurable IntrcWith 369D26521-519 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369D26521-503	• Equipment Instl Not Procurable Intrch With 369D26521-517 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS

I L L	Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
	1		369D26521-501	• Equipment Instl Not Procurable Intrch With 369D26521-515 See Fig 2, 3 And 25-10-00 For Further BKDN	REF		D 000001-SUBS
	1		369H6610-503	• • Tube Instl, Static Pressure Not Procurable	1		D 000732-SUBS
	1		369H6610-501	• • Tube Instl, Static Pressure Not Procurable	1		D 000001-000731
	1		369H6420-511	• • Equipment Instl, Electrical Not Procurable Ref 96-00-00 For BKDN	1		D 001225-001226
	1		369D296615-501	• • Markings Instl Not Procurable Ref 11-10-00 For BKDN	1		
	1		369D26615	• • Markings Instl Not Procurable Ref 11-10-00 For BKDN	1		
	1		369D24101	• • Equipment Instl, Electrical Not Procurable Ref 96-40-00 For BKDN	1		D 001370-SUBS
	1	1	MS21083C3	• • • Nut	1		
	1	2	AN960PD10	• • • Washer	1		
	1	3	NAS603-10	• • • Screw	1		
	1	4	MS25281-10	• • • Clamp	1		
	1	5	369H6625	• • • Tee, Female, Rum Tube	2		
	1	6	CAV110	• • • Valve, Drain	1		
	1	7	MS2108C3	• • • Nut	2		
	1	8	AN960C10	• • • Washer, Flat	2		
	1	9	NAS1169D10E	• • • Washer	2		
	1	10	NAS517-3-3	• • • Screw	2		
	1	11	369A8136-3	• • • Bracket	1		
	1	12	369H6610-7	• • • Tube	1		
	1	13	369H6612-3	• • • Tube	1		
	1	14	369H6628	• • • Tee Fitting, Run 1/4 Tubing	1		
	1	15	369H6610-21	• • • Union Assy	1		
	1	16	NY400-1-2	• • • • Fitting	3		
	1	17	MS18034-4	• • • Strap	3		
	1	18	MS21042-1032	• • • Nut	3		
	1	19	AN960PD10L	• • • Washer	3		
	1	20	NAS1096-3-10	• • • Screw-Hex Head	3		
	1	21	MS25281-4	• • • Clamp, Strap	1		
	1	22	369H6610-9	• • • Tube, Static Pressure	4		
	1	23	MS17821-1-9	• • • Strap	1		
	1	24	369H6610-13	• • • Tube	1		
	1	25	D4274	• • • Screen, Bug Intrch D3738	1		D 000312-SUBS
	1	25	D3738	• • • Screen, Bug	1		D 000312-SUBS
	1	26	369H6626	• • • Tee, Female, Branch Tubing	1		
	1	27	MS35490-9	• • • Grommet	1		

I L L	Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
	1	28	369H4515	• • Indicator, Outside Air Temperature (Fahrenheit)	2		
	1	29	369H6548	• • Spacer	1		
	1	30	369H6549	• • Seal	1		
	1	31	369H6510	• • Box Assy, Stowage Compartment	1		
	1	32	NAS601-6	• • Screw	1		
	1	33	AN960PD6L	• • Washer	1		
	1	34	369D24648	• • Holder Operation Record	4		
	1	35	MS20470AD2	• • Rivet	1		
	1	36	369H4244-7	• • Nameplate	1		MD 000001-001346
				For Replacement Order 369D24060-3			
	1	36	369H4244-5	• • Nameplate	1		D 001309-001346
				For Replacement Order 369D24060			
	1	36	369H4244-3	• • Nameplate	1		
				For Replacement Order 369D24060			
	1	36	369H4244	• • Nameplate	1		D 000001-001308
				For Replacement Order 369H4244-5			
	1	36	369D24060-3	• • Nameplate	1		MD 001347-SUBS
	1	36	369D24060	• • Nameplate	1		D 001347-SUBS
				For Replacement Order 369D24060-3			
	1	37	369D26561-513	• • Trim Instl, Interior, Diplomat White	1		D 000001-SUBS
				Not Procurable Ref 25-30-00 For BKDN Crew And Passenger Compartments, Diplomat White Component Of 369D26521-513			
	1	37	369D26561-511	• • Trim Instl, Interior, Yellow	1		D 000001-SUBS
				Not Procurable Ref 25-30-00 For BKDN Crew And Passenger Compartments, Yellow Component Of 369D26521-511			
	1	37	369D26561-507	• • Trim Instl, Interior, Orange	1		D 000001-SUBS
				Not Procurable Ref 25-30-00 For BKDN Crew And Passenger Compartments, Orange Component Of 369D26521-507			
	1	37	369D26561-505	• • Trim Instl, Interior, Blue	1		D 000001-SUBS
				Not Procurable Ref 25-30-00 For BKDN Crew And Passenger Compartments, Blue Component Of 369D26521-505			
	1	37	369D26561-503	• • Trim Instl, Interior, Beige	1		D 000001-SUBS
				Not Procurable Ref 25-30-00 For BKDN Crew And Passenger Compartments, Beige Component Of 369D26521-503			
	1	37	369D26561-501	• • Trim Instl, Interior, Red	1		D 000001-SUBS
				Not Procurable Ref 25-30-00 For BKDN Crew and Passenger Compartments, Red Component Of 369D26521-501			
	1	38	369D296598	• • Trim Instl, Interior	1		MD 000001-SUBS
				Not Procurable Ref 25-30-90 For BKDN			

I L L	Fig. No.	Item No.	Part Number	Description	Qty. per Assy.	Used on Code	Model / Serial No. From - To
	1	39	369H92813-503	• • Step Assy, Passenger For Replacement Order 369D26505-1 And 369D26505-2	2		
	1	39	369D26505-2	• • Step Assy, Passenger, RH	1		
	1	39	369D26505-1	• • Step Assy, Passenger, LH	1		
	1	40	NAS603-8	• • • Screw	1		
	1	41	AN935-10	• • • Washer	1		
	1	42	LW1325-1	• • • Pin	1		
	1	43	53409	• • • Lanyard Assy	1		

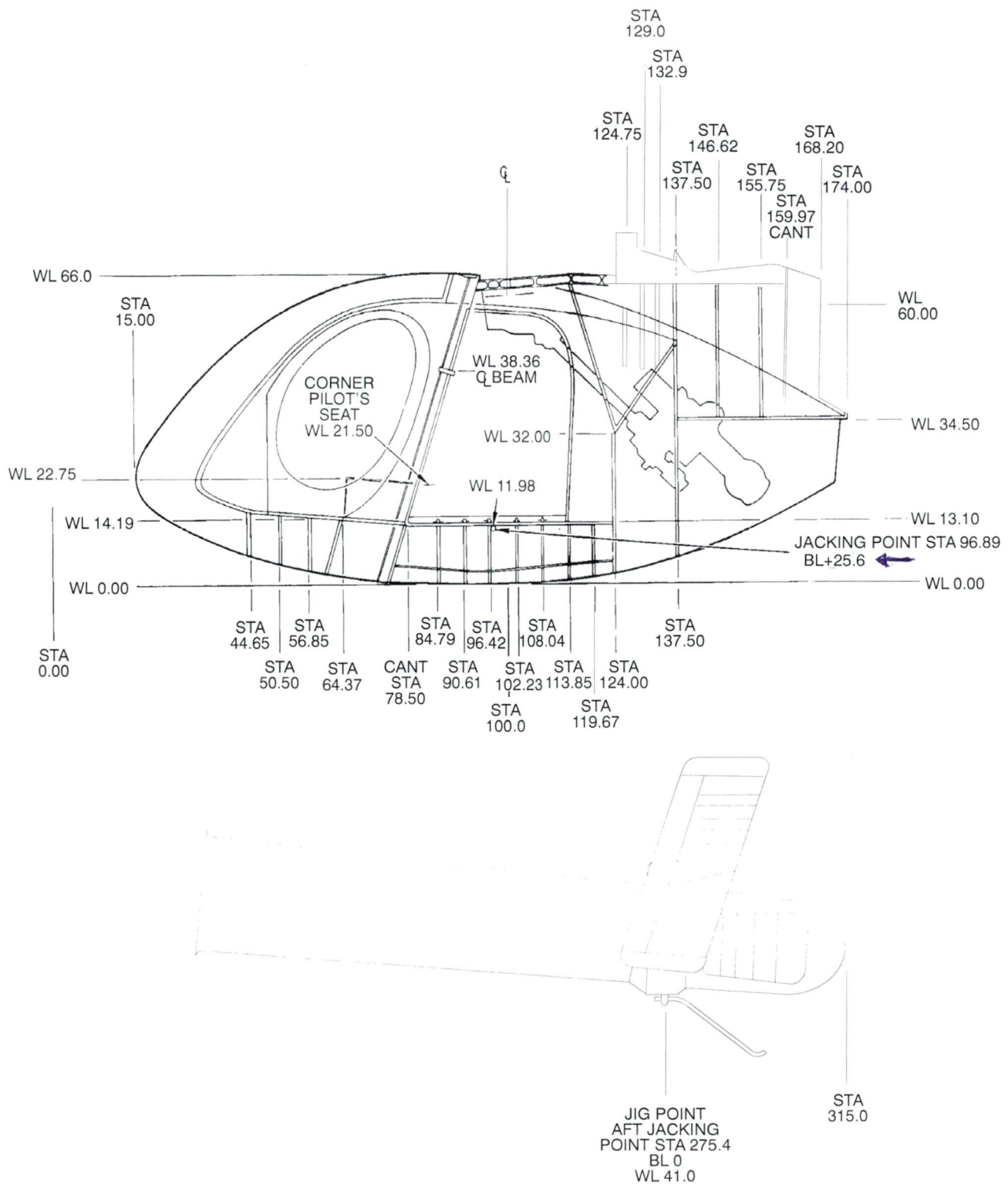


6G06-004B

Figure 209. Fuselage Station Diagram - Model 600N

EFFECTIVITY: ALL

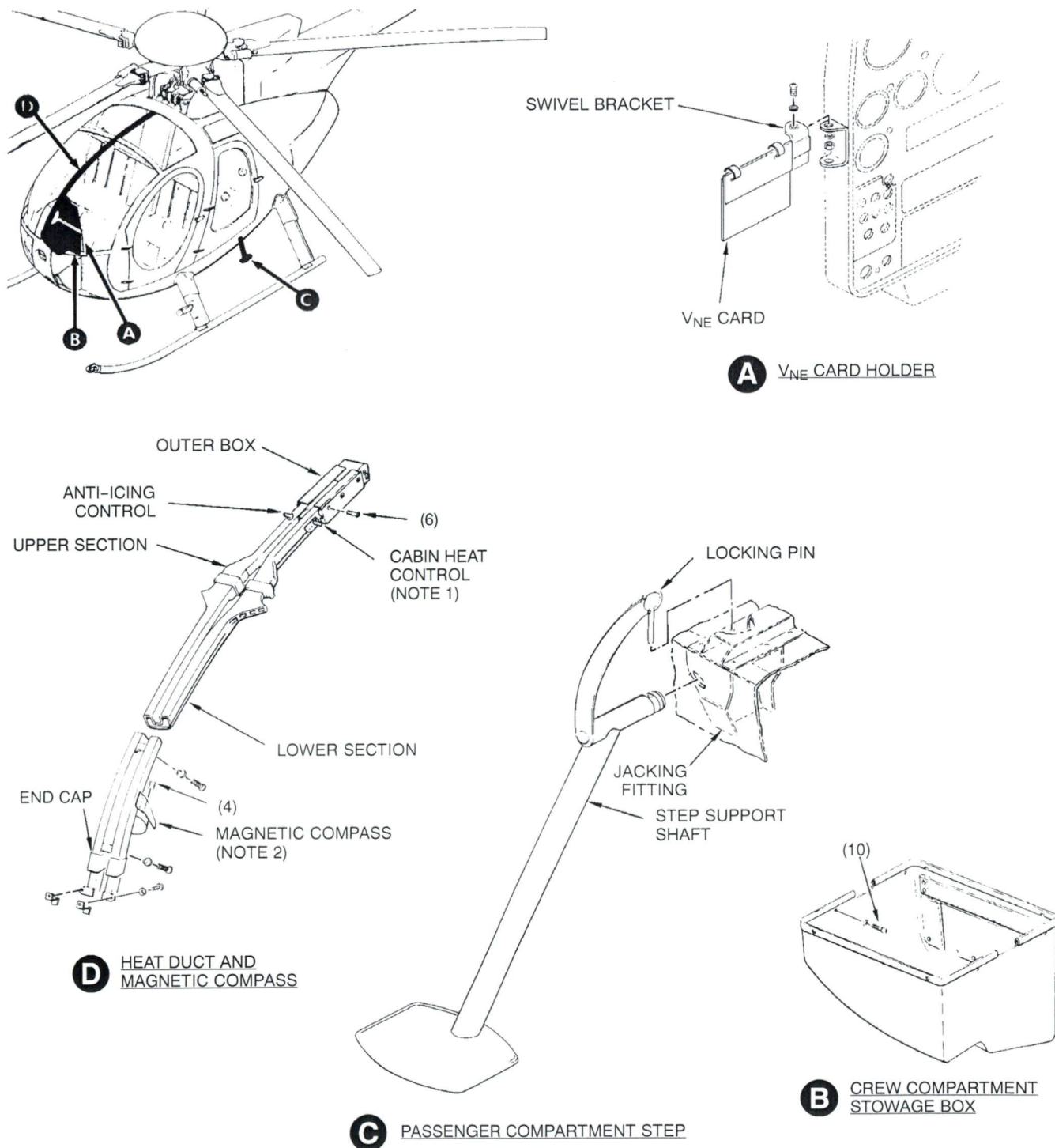
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G06-0007A

Figure 208. Station Diagram - Model 500N

EFFECTIVITY: ALL



NOTES:

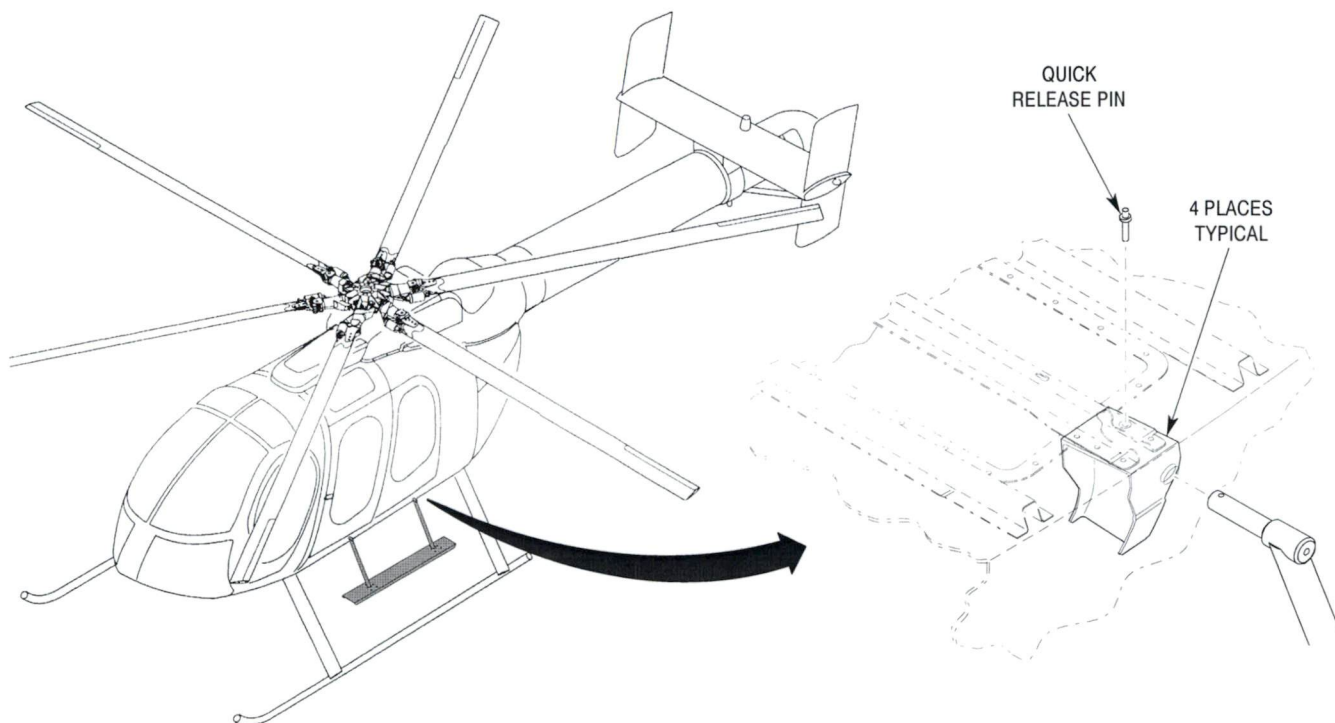
1. OPTIONAL EQUIPMENT, (REFER TO APPLICABLE OPT EQPT MANUAL.)
2. FOR INFORMATION, REFER TO CSP-HMI-2.

G25-4001-1

Figure 201. Miscellaneous Furnishings (369D) (Sheet 1 of 2)

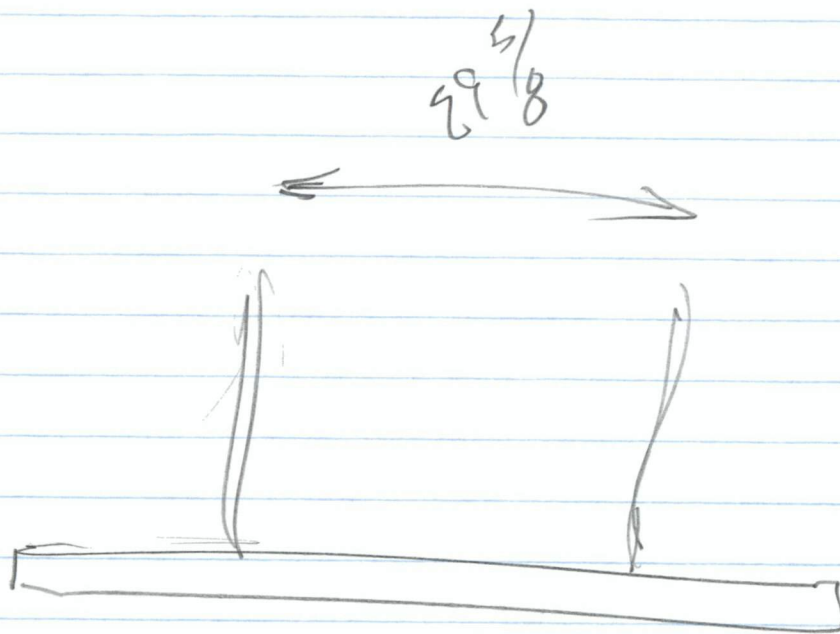
EFFECTIVITY: ALL

25-10-00

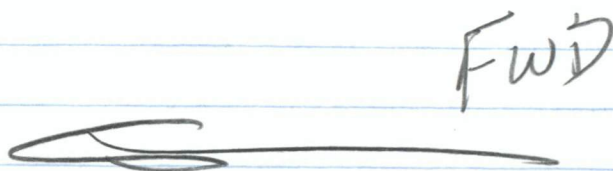
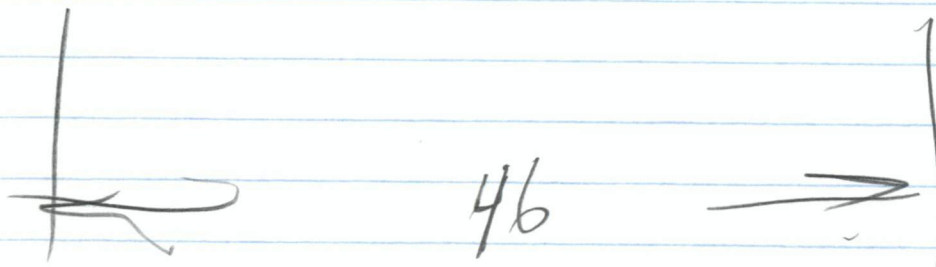


6G25-080

Figure 203. Passenger Step Assembly (600N)



| 10 | | 6 1/2 |



LEFT STEP.

~~Dylan Hughes? 286-1982 Saturday,~~

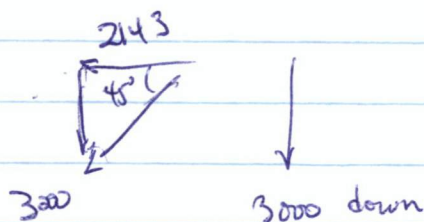
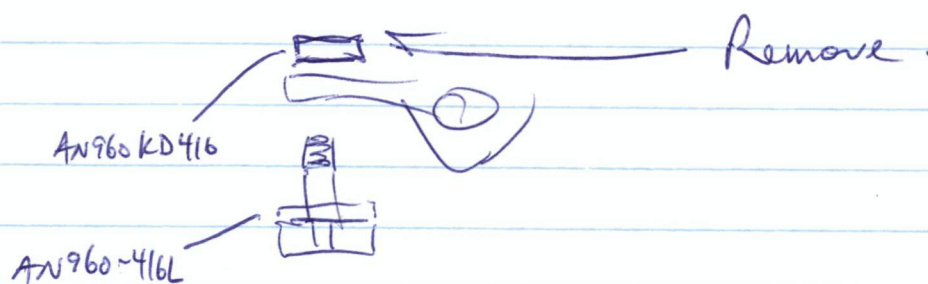
- Check Parts book for Lock Pin P/N for step

- ~~get Favorites from old Computer onto new.~~

M0600 Cargo Hook inst \rightarrow 369490072-525

3000 lb.

Bolt should be NAS1304-10

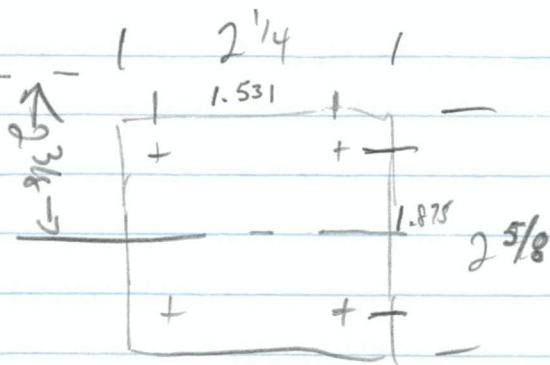


$$39.274 \text{ in}^3 \times 0.3 = 11.2$$

7.1" inboard from outer face of beam

Hook PAD

Rivet Row IN LINE w/ Aft attach on centre



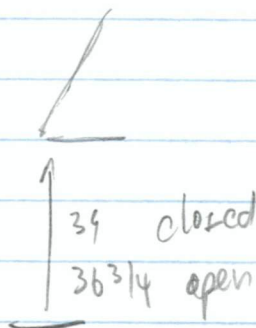
1/4" Bolts

25 1/4 to belly

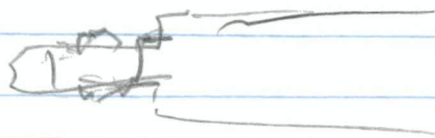
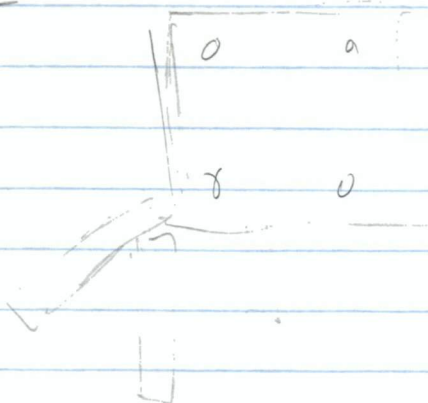


Job for rescue cargo hook on a 500 for Helimax

Rear door



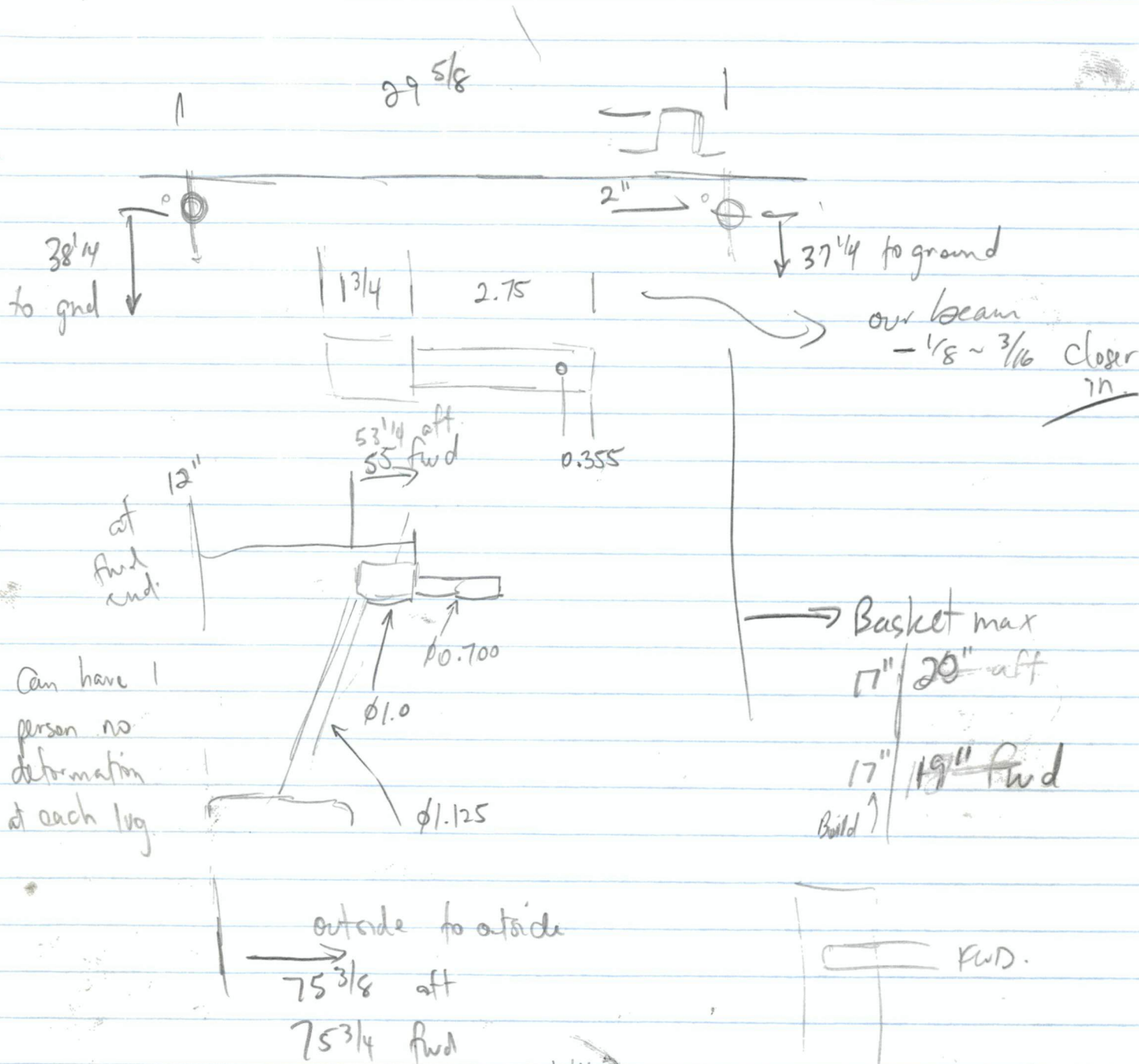
lid must be 2 1/4 below
C of hard point



$$\begin{array}{r} 0.46 \\ 0.25 \\ \hline .71 \end{array}$$

$$\begin{array}{r} 0.375 \\ - 0.031 \\ \hline .344 \end{array}$$

 0.355



PIP PWD for holding step
 LOCKWELL PUSH-PULL
 62060/LW1325-1

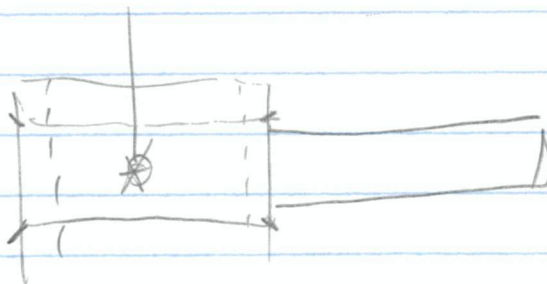
$$\begin{array}{r} 6 \frac{1}{4} \times 2 \\ 71.875 \\ - 29.625 \\ \hline 41.875 \\ 20. \end{array}$$



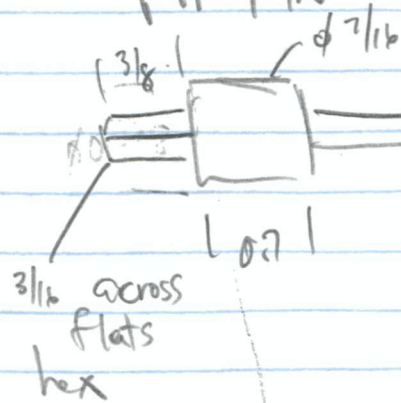
ROUND TOP
USE 1" tube to
Cap.



ROSETTE

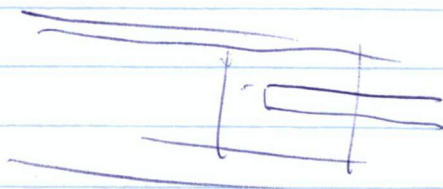


PIP PIN



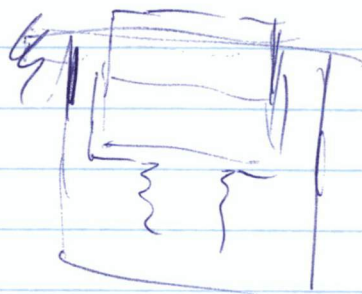
3 5/16 long
1/16 chamfer
← $\phi 3/16$





1) TAKE $\frac{1}{16}$ OFF
BOTH PINS
INTO STEP HOLES

2) TAKE $\frac{1}{8}$ OFF BOTH
PUSA TUBES
BEFORE WELDING



AN490 Threaded Rod end

AN490HT10P 5/16-24 for 5/8 x 0.035 TUBE
11P 5/16-24 for 3/4 x 0.035 TUBE



Hook Bolts (existing) NAS 1304-9 (~9/16 grip) ✓

9
16
4
29

For 1 1/4" thick block, need NAS 1304-29 H

or NAS 6604-29 H ↑ head drilled.